

Developers share code and knowledge bases over intranets. Our monthly Intranets magazine follows page 72.

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"Gimme respect!"

cry IS professionals. Computerworld's Annual Job Satisfaction Survey shows IS is willing and able to be a strategic business partner.

Goodbye to the glass house

Processing punch, low cost propel CMOS gains

By Tim Ouellette IT'S ALL AROUT power and

This summer, a new breed of small, affordable mainframes will finally offer the processing

ing and expensive predecessors. The systems are expected to touch off the final leg in the

march to CMOS, or air-cooled, mainframes. Driving the move is the huge savings in size, energy and maintenance to be gained compared with the longserving water-cooled technology

(see chart, page 115). Depending on the syster

users could save up to 95% of their old mainframe floor space, use 97% less energy and reduce their maintenance costs by 65%. Some users claim they have

saved hundreds of thousands of dollars in the first year. For example, Boston College replaced its old mainframe. which had to be removed with a

crane because it couldn't fit in Goodbye, page 15

IS heartened by Sun's end run on encryption

Ry Sharon Gaudin

million per year researching and developing liquid crystals and heat-resistant glass. But that's where the high-tech stops. When it comes to sharing research information. Coming's scientists are reduced to highly paid and well-educated couners.

which slows project progress by weeks - even months. Corning, like many U.S. man ufacturers, is forced to rely

Extranets put IS

> Pitfalls inherent in business apps are legion

By Kim S. Nash GE supplier in Memor, Ohio.

The peoblem was that the very GENERAL SIECTRIC CO. SAYS IT open, online bidding process halved its 14-day purchasing cymeant suppliers were constant cle by communicating with sup undercutting one another's oliees over an extranet instead of the old-fashioned trio of phone.

Extranet builders face varie delicate business issues when they create a World Wide Web application for business-tobusiness electronic commerce Some question whether infor mation systems department can be trusted to run extranet

projects that, if handled poorly Extranets, page 21

they demanded it be redesigned. "Nobody liked it," said Rich Wilson, operations manager at Matrix Tool & Machine, Inc., a CORNING. INC. Spends Stor Quick, hide the warehousing experts!

fax and postal mail.

But there is a secret behind

that success story: The first ver-

sion of the application upset GE's puppliers so much that

Ry Crain Stedman WEEO IS WORKERS with data warehousing skills? Join the crowd. And if you're lucky enough to have such workers already, grab your calculator and start figuring out how to keep The explosive growth of data warehousing has left a huge shortage of experienced warebouse architects and managers in its wake. That's good news for data warehouse workers who want to cash in for a binner pay check. But it could be bad news for information systems manage ers and their employers.

Warehousing experts, page li

SEXBEJFTS CONCERNS CAR-RT SORT OF DRIVE

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Encryption, page 115

Selling vision

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Vendors invest illines to solve dicresoft's arabiens.

depted the highly proprietary Windows as a fixed of public do nain standard, despite the fact that each sale of the product arther consolidated power in Rederend, Week. So is its with Windows HT. Microsoft can afford to take its more making HT ready for the data canter. Other people will

Paul Gille, Editor net: poul_gillin@cw.com

WAVE BY RICH TENNANT



OK LARRY, ENOUGH ABOUT THE ELECTION, LET'S TALK INTERNET BROWSERS. NEITHER ONE OF THE TWO BIG ONES ADEQUATELY REPRESENTS THE USER, WHICH IS MAY I PLAN TO LAUNCH A THIRD ACTERNATIVE - THE "REFORM BROWSER"

Dell zaps SAP

▶ PC maker scales back on R/3 implementation

IN AN EFFORT to react more ackly to market changes. SAP AG user Dell Computer Corp has pulled the plug on what was to be a soup-to-nuts in-house R/s implementation Instead, the Austin, Texas. PC

maker is growing a four-tier global computing architecture. Plan B rehes heavily on messaging technology and includes a "frighteningly large" collection proprietary and packaged software, including SAP's human resources application. "SAP implementations take a

long time, and SAP consultants unbelievably expensive. said Jerry Gregotre, Dell's chief information officer. He canceled a full-blown SAP implementa tion project after joining Dell from Proseco, Inc. last July By then. Dell had already paid for the software licenses, some of which will go unused. At least three different implementation partners also had been on the project. But Gregoire said mon-

ey wasn't the major reason for

By Julia King scrapping the peoject, which

was already under way. In light of Dell's explosive growth, "having a full SAP suite and all of these tightly integrat ed applications going into the company at the same time didn't make as much business sense as it did before," he said.

QUICK CHANGE For starters, Dell must be able to

react very quickly to changes in the fast-paced PC marketplace. That means making changes to ordering, manufacturing and other systems potentially on the fly. Modifying R/3, by contrast. is difficult and time-consuming Gregoire said

Also, Dell's quarterly sales have skyrocketed by as much \$1 billion annually. When the firm hat \$6 billion in mid-1996, Dell split into several regional busi ness units; each has its own IS priority list, Gregotre said. Realistic" is the way a fellow R/3 user characterized Dell's decision to scale back its SAP

"The issue comes down to

that R/s is highly integrated. To make changes, you have to be like a surgeon doing work on the beart. " said the manager who asked not to be named

Gregoire emphasized that Dell wasn't dissatisfied with the R/s software it had already installed nor with SAP as a vendor. Rather, its 15 architecture strategy changed to one of emploving thin clients and a message-brokering laver. With this architecture, Dell will achieve the same level of data integration as it would have achieved with R/3, he said.

Still some analysts view Dell's decision as a bad omen for SAP

"The scary part for SAP is that Dell is watched as one of the more successful business entities. When they do something, other companies take notice," said Rob Enderle, an analyst at Giga Information Group in Santa Clara, Calif. Dell already has built some

applications under the new messaging architecture, completing all the work in-house. Gregoure said. Frenmully the nlan is to "run Dell on Dell [hardware]." That wouldn't have been possible with R/3, because its large, centralized database couldn't fit on a Delt machine. Gregoire said. (7)

BP dumps the mainframe

By Thomas Hoffman PHOENIX

TOU'LL HAVE TO trash those legacy mainframe systems to give your company the flexibility needed to survive in today's chaotic economy

That was the message ham mered home by John Cross, general manager of information technology at British Petroleum PLC (BP) in Hertfordshire, U.K. Cross was the keynote speaker at Executive Technology Summit '97, an IT leadership conference sponsored by the Society for Information Management

and Computerworld. Cross speaks from experience. BP spent \$150 million to move from an IBM VMS main frame environment to a client/ server architecture to accommodate the company's changing business model

By taking some drastic measures, BP has reduced IT costs by \$250 million since 1990. It has done so partly by shutting down data centers and by slashing its IS head count 00% from 1.400 global staffers to a "virtual" staff of 97.

While eye-opening, BP's expersence drew cautious reaction. One IS executive said Cross approach is probably too radical for many companies. "I don't think most finformation systems executives) would be spirited enough" to launch this type of overhaul, said Jonathan

Vaughan, vice president of IS at Prudential Insurance Co. in Roseland, N.I. But Cross said he was responding to a new business situation: BP has broken into ga independent business units since 1990. So the company's

IT group regrouped by becoming a "virtual" services provider for the business units. High-volume transaction processing systems

as sinil our link sile (III)

might work for airlines and banks, Cross said, but BP's business requires a different technology architecture

For example, BP halved the cost of drilling for oil in the Gull of Mexico, in part by using its existing information more effectively through a distributed srchitecture and by applying three-dimensional modeling. technologies. The transition wasn't easy. Cross said, because there was "a

great deal of opposition" from

units that had grown accustomed to having their own technical support groups. It took nearly three years to "eradicate" all of the local IT units, he said. But once BP's revamped IT group could deliver improved ervices at lower costs, it was able to gain credibility with end

Users vexed by glitches in Win NT 4.0 Service Pack 3

By Laura Di Dio

HEAT WE GO AGAIN That's what some users were saving a scant to days after Mi-

crosoft Corp. released its latest bug fix for Windows NT 4.0. Dozens of users on the vari ous Microsoft forums on the Internet and CompuServe reported a variety of problems after installing Service Pack v (SPv).



The glitches ranged from an mability to run Java applets or use Microsoft's Internet Explorer to system lockups resulting from an assortment of printer and driver problems (see box).

Stu Ssouwerman, executive vice president of SOFTWARE Sun Belt Software, Inc. a distributor of third-party Windows NT mannent software in Clearwater, Fla., said the problems with SP1 were nowhere near as severe as those encountered with Service

Pack a (SPa). But the glitches were still disruptive and vexing, he said. Siouwerman, who also edite the "Windows NT Tools" news letter, said despite' the latest alriches in SPs, the quality of the patch was "much higher than SDa

Chris DeVoney, a Windows NT reviewer in Seattle, said he experienced a string of memory errors and experienced systems lockups when he installed SPs. Enzo Schiano, Microsoft's group product manager for Windows NT, said the company analyzed DeVoney's problem and found the glitches weren't inherent to SP "We've done extensive test-

ing, and DeVoney's problems have nothing to do with Service Pack s. If and when we get reports of other problems, we will thoroughly investigate them and issue any necessary fixes as quickly as possible." Schiano said

SP3 does give users Internet, curity and remote access enfiancements for the Windows NT Server and Workstation 4.0

It includes password filtering, a new version of the remote procedure call that supports message queuing in the upcoming Microsoft Message Queue Serv er, support for the Microsoft Cryptography API 2.0 to pro-vide public-key and symmetric key security operations; and support for DirectX 5.0 for anced audio and video

Lawson turns to browsers

By Tim Ouellette

LAWSON SOFTWARE. INC. wants to replace drawn-out client/server installation and training schedules with an approach that lets users access Lawson application data from World Wide Web browsers and

Other vendors are doing that to some degree. But Lawson plans to completely revamp its Insight business application suite so data presentation targets Web browsers and includes stures such as hyperlinking. Users will be able to surf through Lawson application pages and get the data they need

in the same way they now surf the Web. Minneapolis-based Lawson's procurement module will be the per to have that ability The rest of the Insight line is

slated to be revamped by early

merit, especially for sites that have gone through an expensive client/server installation. When a company decides to expand access to more internal or external users, the training and impl mentation costs, plus scheduling, become daunting.

To move from hundreds to ousands of users, you can't just take your existing application screens and deploy them on the Web," said Adam Thier, an analyst at Meta Group, Inc. in Stamford, Conn. That's because client/server applications use a forms approach that can be oumbersome and take time to

"It's very intuitive," said Theresa Bongiardino, a project leader at Skadden, Arps, Slate, Meagher and Flom LLP in New York, who is testing Lawson's approach. "You don't need training if you are already familiar with a Web browser."



▶ Group wants to reduce outages, router foul-ups

By Kim Girard CALL IT THE Internet Rescue Society

Nine of the largest internet service providers last week teamed up to focus on reducing 'net outages, sharing technical problem reports and preventing couter foul-ups.

This is a big step," said Internet observer Rob Metcalfe, vice president of technolo at Roston-based International Data Group, Inc., the parent company of sterworld.

There's a problem, and it needs solving. And this is a way of solving it," Metcalfe said.

lops.org will be run by the nonprofit Corporation for National Research Initiatives (CNRI) in Reston, Va. Members include AT&T Corp.; net more reliable. Recent out-

ANS, an America Online co nany: BBN Corn.: EarthLink Network Inc.; GTE Corp.; MCI mications Corp.; Netcom On-Line Communication Services, Inc.; PSINet, Inc.; and

UUnet Technologies, Inc. Improved routing is particu larly important to Robert Mos kowitz, a technical support specialist

at Chrysler Corp. in Detroit. "I have seen gosecond outages, Moskowitz said. "If you want to

do near real-time work lover the Internet), a 15-second outage on the network can be more than you can live with I can't much

The formation of lops.org is expected to reduce growing pressure for government action to make the Inter-

ivered electronic mail have highlighted the Internet's vul-nerability.

WATCH OUT! Ira Richer, network and re-

facilities D

search director at CNRI and in terim director of lops.org, said Internet service providers must ner out a common system to distribute trouble tickets. The trouble tickets are used to describe a problem on one network that could affect other

"That sharing of info is not done now," Richer said. Who do you call at the other organization if there's a problem at 11 p.m. on a Saturday night lops.org won't set standards or enforce policy, but Metcalfe said there will be pressure on the country's roughly 3,000 other Internet service providers to cooperate with the group's

"Uncooperative (providers) will go out of business or will be shunned by colleagues, Met-



How do you deal with a boss like thank Managing, page 67

Domino price hike sign of rising E-mail prices

 Gartner report predicts vendors will raise server prices to make up for client-side losses

By Barb Cole-Gomolski THE COST of messaging is go

For the second time this year, Lotus Development Corp. has hiked the price of its Domino Server. And that has users and

analysts predicting the end of commodity pricing for electronic mail and groupware systems Starting July 1, Lotus will charge \$1.495 for the singleprocessor version of its Domi 4.6 Server, up from \$995. In lanuary, the company raised the base price from \$495 to \$995.

Pricing is always a hot issue, but the price of messaging software accounts for less than 10% of the total cost of ownership, according

to Gartner Group.

Analysts said the increase is an attempt by Lotus to make up for falling prices on clients over the past few years.

more for their messaging and groupware systems than they did over the past year, said Tom Austin, an analyst at Gartner Group, Inc. in Stamford, Conn. "Per-user prices for this class of software have hit bottom and are going up from here."

As a result, "We'll look harder at whether we want to upgrade [to newer versions] or add servers," said Joe Wolke, director of corporate information resource management at Brunswick Corp. in Lake Forest, Ill., which

this week titled Warning Workgroup Systems Licenses Will Change," which predicts further price increases for groupware servers.

traditionally paid for workgroup software by purchasing an expensive client license and a serv.

At one time, the Notes client sold for \$495, and a mail-only

client cost about \$100. Today Notes Mail has dipped below

The report predicts the emergence of a new pricing scheme for workgroup systems - a capacity licensing model - in which user charges are based on server capacity

The move to Internet protocols means that sites can now run free World Wide Web browsers as mail clients by paying a nominal client access li cense fee to their economer-

Austin said companies are now buying more sophisticated phisticated server hardware that lets them run up to thousands of users per server, which also drives up server

In the past, compa nies might expect to run up to several hundred users on a

"The vendors continue to draatically increase the number of clients that each server can support, which results in a drop in per-user revenue from server software licenses," Austin said. None of the messaging vendors has announced plans to move to this pricing model, although there are indications that Lotus isn't the only vendor trying to raise prices.

single server, he said.

In January, Netscape Côm nications Corp. in Mountain View, Calif., said the price of its Communicator client would increase from \$49 per user to \$59 per user. That product is due in the middle of lune. So far, Microsoft Corp. has

beld to its original Exchange pricing: \$000 for its basic server and five client access licenses. The Enterprise Edition, which is more comparable to Domino Server, costs \$3,549 with as client licenses. The company did try to slip in

an increase when it shipped Exchange 5.0 in March by charging a \$50 fee for Web clients that accessed Exchange public folders. Microsoft reversed its decision in April because of pressure from users, sources said. C

But users will wind up paying

he said.

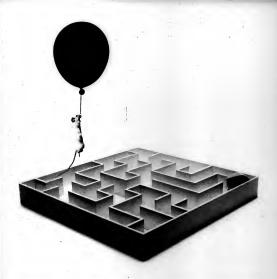
COMPORATE STRAFGOICS

has about 4.000 Notes neutr.

NEW PRICING SCHEME Gartner will publish a report

The report states that users

er license.



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To provide the complete of t

Cover your assets

> Year 2000, other management tasks demand accurate inventory of distributed systems

By Patrick Droden

THE SPECTER of your 2000 disruptions rappling through client/server networks has pted IS managers to take a ard look at asset management Distributed systems and soft

ware may choke on the "oo" date, causing the loss or cornus tion of data locally and in vital "Some organizations will face

serious failures at the end of the decade. I'm glad we won't be one of them," said Scott Nason. chief information officer at American Airlines in Fort Worth, Texas.

But without adequate assi ment tools and practices, information systems manappre can't target which of the thousands of PCs and programs

Nearly half our client have lacks a good central understand ing of what assets they bave. said Chris Germann, z senior research analyst at Gartner Group, Inc. in Stamford, Conn.

system didn't work.

The new State Aut

Child Support System (SACSS)

lost financial records. Data from

one case would menteriously

turn up in another. Key forms

weren't available. Processes that

once took 20 minutes began to

take an hour or more. People

were left waiting in the lobby

Faced with the need for that information, those clients hire a service provider to audit distributed systems, "limp along until they can install an enterprise management framework" or "shoot from the hip" with a tac-

"We inventoried PCs to fix or replace all hardware by second quarter 1999," - Scott Nason

C10. American Airlines

One such tool is NetCensus from Tally Systems Corn. in Hanover, N.H. Two organizations recently uncovered asset surprises when they implemented NetCensus to acreen for ar 2000 problems.

Montgomery College in Rock rille. Md., for the first time ran a rdware inventory of 3.000 PCs at three sites. The test re-

applications and operating sys tem software uncovered in an audit will be replaced or upgrad-

support payments involves locating noncustodial parents, their employers and their assets to ensure payments. More child support payments often mean

planet tried to recruit people that have been in child-support enforcement, and there is only a

Lansing.

present system." State enforcement of child-

ing plans to upgrade our

limited pool of those folks," said Dawn Shattuck, chief information officer at the Michigan Family Independence Agency in

That shortage of talent has prompted California's vendor, Lockheed Martin IMS in Teaneck. N.J., to shift key people

"We were trying to roll this system out to meet the deadlines

of nurseless "

- State CIO John Flynn

out of California to other states. said Gern Magers, chief deputy director at the Health and Welfare Data Center in Sacramen 'That has been a significant issue," she said. "If their key de-

signer moves to another project. we've been left with a vacuum for a period of time and have suffered for that."

Feel better all over

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business technology, users and analysts said. But tracking tools can pin-

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SCARY PROCESS

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Our latest inventory shows

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dows or The LANDesk Management Suite from Intel Corp. belps central IS examine the available memory and disk space on 1,200 remote PCs. said Matthew Maguire, manager of end-user technology. Meanwhile, the help desk software tracks purchase information.

Managing 5,000 PCs with out asset management tools is "scary," said for Hays, a PC/LAN project analyst Fortis, Inc. in New York.

The insurance company's IS proup "used to have to ask pur ing what we owned " Have said. But then "we couldn't tell where it all went - into another cubucle or out the door."

Lockheed Martin, which hasn't been paid by the state since February pending correc tions to the system, denies that

staffing has hurt the project. But both sides agreed that a rapidly rising caseload, from out 800,000 in 1002 when the project began to 2.2 million today, has slowed the project. Other factors include mur changes and additions to the

system design.

California state officials are examining the cost of staying with SACSS. If there is a "better alternative, then the state of Califormia will salvage what it can out of the system, and it will go to a different system," Magers

a host of federal requires roll this system out to meet the deadlines this fall, and we got too far ahead of ourselves," he

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real way to know what applica tions were out there," said Dave Anderson, lead analyst and year 2000 project manager at the The first inventory turned up 1,500 unique applications and "hardware we never would have known about," be-

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ample, to properly recognize the

Basin Electric Power Coopera

tive in Bismarck, N.D., had "no

Much of the risky hardware

at the Orange County Family Support Division, "We're mak-

lower welfare costs, according to officials.

Some in California agency return to legacy roots Re Patrick Thibadeau for hours. Young said. On May 1, the San Francisco office pulled the plug on SACSS CALIFORNIA'S NEW child support enforcement system arafter running it for six months rived at Edwina Young's office and rebooted its legacy system. in the form of 28 three-inch SACSS was supposed to be binders. Those were the train-

Half-hatched system

is half-baked, users say

deployed at child-support offices statewide. But California offi-So Young, director of San cials may scuttle the whole Francisco's Family Support Buproject, depending on the outresu, and her staff spent a year come of a test of a new version turning the unwieldy binders of the software. That test is now into user-friendly training mate rials. But then the distributed

ILL COULD BE \$300 MILLIO The project so far has cost more than \$90 million and is run ning in only about a third of the state's counties after five years. It may cost more than \$100 mil-

bon if it is ever completed We're assuming SACSS isn't g to get here," said Jan Stural, supervising district attorney

this fall, and we got too far ahead

Federal law requires that all states have statewide child support enforcement systems operating by October. But only 12 smaller states are ready to meet the federal deadline.

The deadline has created its own problems. Once the federal government announced the mandate, "every vendor on the

thice John Flynn, said he believes the project was set up for failure by that stimulated in orrest detail the design of the system and what it should do. "We were trying to

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"Our latest inventory show we have about a hund 286/186 PCs still in the office here, so we can just get rid of them," said Mark McCardle supervisor of PC support at U-Haul International, Inc. in Daily benefits of accurate in-

ventory data include stream lined support from U-Haul's belo desk, because staffers can ausckly check for changes to a caller's hardware or software configuration, McCardle said.

American Airlines began asset management efforts years ago "for more stringent cootrol on information technol nformation technology) ng," Nason said. "But now all our updates have the year 2000 problem in mind."

SCARY PROCESS Other organizations haven't ad-

dressed the year 2000 date change problem but report feeling confident because they have some tooks in place. At Domino's Pigga, Inc., for example, the more pressing problem is migration to Win-

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Half-hatched system is half-baked, users say

Some in California agency return to legacy roots

By Patrick Thibedray CALIFORNIA'S NEW child

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reau, and her staff spent a year turning the unwieldy binders into user-friendly training mate rials. But then the distributed system didn't work.

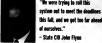
The new State Automated Child Support System (SACSS) lost financial records. Data from one case would anysteriously turn up in another. Key forms weren't available. Processes that once took 20 minutes began to take an hour or more. People were left warting in the lobby

for hours, Young said. On May 1, the San Francisco office pulled the plug on SACSS after running it for six months

and rebooted its legacy system. SACSS was supposed to be deployed at child-support offices statewide. But California officials may scuttle the whole project, depending on the outcome of a lest of a new service of the software. That test is now under way. BILL COULD BE \$300 MILLION

The project so far has cost more than \$90 million and is running in only about a third of the state's counties after five years It may cost more than \$100 million if it is ever completed We're assuming SACSS isn't ng to get here," said Jan Stu ral, supervising district attorney at the Orange County Family Support Division. "We're mak ing plans to upgrade our present system." State enforcement of childsupport payments involves lo-

cating noncustodial parents. their employers and their assets to ensure payments. More childsupport payments often mean lower welfare costs, according to officials. "We were trying to roll this



states have statewide child-

of ourselves." - State CIO John Flynn

Federal law requires that all out of California to other states.

support enforcement systems director at the Health and Weloperating by October. But only fare Data Center in Sacramento. 22 smaller states are ready to 'That has been a significant meet the federal deadline. issue," she said. "If their key de-The deadline has created its signer moves to another project, we've been left with a vacuum own problems. Once the federal government announced the for a period of time and have mandate, "every vendor on the suffered for that "

Lockbeed Martin, which hasn't been paid by the state since February pending corp tions to the system, denies that staffing has hurt the project.

But both sides agreed that a rapidly rising caseload, from bout 800,000 in 1992 when the project began to 2.2 millio today, has slowed the project. Other factors include num changes and additions to the system design.

DOOMED TO PAIL

California state officials are exning the cost of staying with SACSS. If there is a "better alternative, then the state of California will salvage what it can out of the system, and it will go to a different system." Magers

In Sacramento, state CIO John Flynn, said he believes the project was set up for failure by a host of federal requirem that stipulated in great detail the design of the system and what it should do. "We were trying to roll this system out to meet the deadlines this fall, and we got too far ahead of ourselves," he said.C

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NT integration worth the trouble, legacy shops say

By Jaskumer Vijayan

DESPITE CONCERNS DVIR Windows NT's scalability and reliability. Unix and legacy shops are finding it easier than

This is true even though many of the eight users and administrators interviewed by sterworld last week said NT has proved buggier than their Unix or lea-

acy systems. Also IMPLEMENTATION that NT lacks the

documentation and software tools associated with an operating system such as Unix Even so. NT has won over these same users because its benefits - ease of manageability and lower costs - far ourweigh its problems We think it has been pretty

ghtforward and easy to bring into our environment." said Larry Sikon, director of technical services at Montgomery Securities. Inc. in San Fran-

"If we were to contrast it to say, a Unix environment, the level of technical nophistication and the cost of manpower required to implement the envi ronment" would have been a lot

Montgomery, which uses a combination of Unix and NT servers to power its main apolications, recently switched its desktops from Macintosh to NT. "There is some frustration

out the lack of software tools and applications for NT, but overall, there have been bittle training, support or learning is-sues savolved," said Paul Hoedeman, chief information officer at AlliedSignal Aero-

space in Torrance, Calif. AlliedSignal, which has thou sands of Unit users and servers nonwide, but started to roll over noncritical

applications to NT Some of the issues that Unix administrators

are running into with NT include the fact that "Unix was built from the ground up to be a multiuser environment... With NT, you can't help feeling that it was all just somehow out together," said Matt Fahrner, director of networking at Burling ton Coat Pactory Warehouse Corp. in Etna. N.H. For instance administrators

who for years have fine-tuned their applications by tweaking the operating system's kernel are sometimes stumped by their inability to do so easily in an NT

A slew of cross platform inteeration software and intercoerability suites are making the inte-

Aire programme obsessment exid Security Forces, Inc. in Charlotte, N.C., for instance, uses an emulation package and a standard TCP/IP connection to link its Unix and NT environ-

Scalability Day short on details

NEW YORK

NO NEWS IS NOT good news when the event in question is a press conference. That was the case last week at Microsoft's Scalability Day, which was short on substance and long on hype-To be sure, Microsoft Chairman Bill Gates did serve up snippets of information, staged demonstrations and taped videos with four weighty bleedingedge customers, including Lockbeed Martin Corp. and Sabre Corp.'s Travel Information Net

work, all extolling the power and scalability of Windows NT. SPECIFICS LACKING As expected, the Redmond

Wash, software giant also for mally announced Enterprise Editions of both Windows NT and Back Office, but the company didn't disclose specific ship dates or pricing (CW. April 21). Microsoft also demonstrated a 1.AT-byte text and image SQL Server 7.n database running on Windows NT 4.0. Not everyone bought the sales

> "Microsoft has to prove to me that NT can scale and that it can support enterprise shops," said attendee Michael Kearney, vice nessident of information surterms at Phoenix Home Life Mutual Insurance Co. in Enfield,

sion-critical

applications on Windows NT now* Kearnes and eight oth analysts even Microsoft at some

points - were quick to note that scalability demonstrafron Tandem Com nuters Inc. Amdahl Corp.

and Digita Fouinment Corp. and indepen tion Processing Performance Council benchmarks, while impressive, don't translate into real-world situations Microsoft's Scalability Day

made the assumption that ev-eryone is "starved for processing and storage capabi said Clay Ryder, an analyst at Zona Research Inc. in Reduced City, Calif. "I don't think that's the case. For starters, there's only one CT-byte installation in the world night now."

Gates himself conceded that

Conn. "Will they get there? question-and-answer session Eventually, yes. Are they there. When pressed why so many us yet? No 1 won't risk my mis- ers have complained about Win NTs Arrest

scalability or lack thereof during the

Gates ware. responded. "We're doing well scaling on eight to to right now, but

nobody's sys scales well over 16 to To get over this apparent

hump, Gates said Microsoft ting \$1 billion in its system software research and development efforts.

Ryder said the qu whether NT will scale up but whether Unix vendors will cost-effectively scale down the price of their systems. "Users' needs haven't grown

as quickly as the technology has. But so far, Unix vendors baven't scaled down the cost of their large systems, and that's why Windows NT is eating into Unix's market - users' needs haven't grown as fast as the very point during a wrap-up technology," he said. II

DEC gives OpenVMS new lease on life By Jaikumar Viigyan of Digital's user base has com-

last week outlined ambitious plans - such as building a server with in times better performance than today's Unix servers - to extend the life of its aging OpenVMS platform.

The Maynard, Mass based company also said it has started shipping the next batch of its Affinity products, which be OpenVMS and Windows NT en unents together.

The announcements made at the biannual Digital Equipment Computer Users Society (DECUS) in Cincinnati, were aimed at reassuring skittish OpenVMS users that the company doesn't plan to abandon the operating system in the near

Although Digital has been ag ssively pushing Windows NT in the past two years, a segment plained that Digital seems to have little interest in OpenVMS. As part of its announcement last week, Digital said it is devel highly scalable ation, Page 41 OpenVMS clustering technol

ogy, code-named Galaxies Soft wate Architecture Digital officials said the softwater will let owers expension break up a big as6-CPU server into several smaller serv such as two 128-CPU or four 64 CPU servers. But the first versions of the system aren't ex-

pected for at least 18 months. "Digital is selling futures here," said Rob Young, a pro-grammer at Knight-Ridder MeduStream, Inc. in Philadelphia 'The company is trying to stir

up some interest in the platform and let prople know how senous it is by tossing out huge fbenchmark! numbers," he sai Digital last week also released products to ease OpenVMS/ Windows NT integration. ()





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NT boosters trigger compatibility concern

By Jaikumar Vijayan

USERS HOPE THE SEPARATE initiatives launched by hardware vendors to enable Wandows NT scalability won't cause com-

Windows NT scalability won't cause compatibility problems.

But a lot will depend on how well each vendor's products mesh with Microsoft Corp.'s forthcoming Wolfpack software for Windows NT scalability, observers said. The vendors include Digital Equipment Corp., Tandem Computers, Inc., NGR Corp., Data General Corp. and Uniter Corp. Wolfpack is a collection of technolopes designed to extend the scalability and availability of NT systems via clustering and fail-over capabilities, for example. Wolfpack was designed to provide a base level of standardization around which hardware vendors can provide

their own value-add through better manageability features, throughput and other

areas.

But the fact that the third-party pcoducts are based on properietary clustering,
interconnect and middleware technologies has led to early concerns that users
could get locked in to a particular ven-

dor's hardware platform.

"There is a definite potential for lockin," said Larry Sikon, director of technical services at Montgomery Securities.

Inc. in San Francisco.

For instance; although NCR and Gorollaty, Inc. each offers users a way to upgrade standard four-way Pentium Proservers to eight-way systems, the approaches used to achieve scalability arproaches used to achieve scalability ar-

"I guess [compatibility] is a concern. But hardware incompatibility issues are less of a problem

than software incompatibilities." - David Krauthamer

Parker Hannifin

To allay user concerns, the vendors and Microsoft claim that all products will be fully compatible with Wolfpack when the software rolls out in the second half

of this year.

"Users have to look at each of these vendor's extensions and figure out how likely it is that Microsoft wil include it in the next release of NT. Or else they [will] get taken down the proprietary path." Sikon said.

A MATTER OF DEGREE

A MATTER OF DEGREE

"I guest it is a concern," said David
Krauthamer, MIS manager at Parker
Hannifin Gorp, in Rohnert Park, Calif.
"But hardware incompatibility issues are
less of a problem than software incomnashilitate."

patibilities."

In the past, Microsoft had acknowledged that the separate approaches could lead to compatibility issues [CW, Sept. 23,

But Mike Nash, Microsoft's director of Windows NT marketing, recently said that despite the plethora of third-party Windows NT hardware, there are no interoperability issues. "All of the products will help Windows

NT to scale. They will absolutely be interoperable. Since they all integrate with Windows NT, they implicitly interpolate operatio. "Nath said. He further explained that users will get a single Performance Monitor, a ringle directory service, a single security service and a single object model to enable bettrageneous applications to communicate with one another.

Nash conceded, though, that businesses may run into interoperability issues if they use hardware or software drivers that haven't been certified compatible with Microsoft products. D
Senior editor Leura DiDio contributed to

Senior editor Laura DiDio contributed to this story.

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net returns come slowly for catalog firms

By Mitch Warner

CATALOG COMPANIES making the leap to the Internet are finding modest sales and slim profits, and significant growth is many years away. Still, they are encouraged by early reviews. It is particularly easy and natural for catalog companies to go

on the Internet, because they have back-end fulfillment, order-entry and payment-processing systems designed to work with remote customers. And it is fairly simple to hook those systems up to the Internet. "Anybody who's got a catalog

and is not using the Internet is out of their mind," said John Nylander, director of informa tion services at the International Male men's clothing catalog, a unit of Hanover Direct, Inc. in San Diego.

According to International Male, it is achieving modest profits by creating a simple. metional site and keeping costs down. It outsourced its catalog creation and maintenance to Vaweb, Inc. in Cambridge, Mass. International Male receives about 10,000 to 15,000 site visits per month. Although revenue is small, the cost of doing business online is even



smaller - Vizweb charges \$300 per month. Nylander said. Housewares company Lillian Vernon Corp. contained costs by having its marketing and infor-mation systems staff create its

site. The company hasn't added staff, said spokesman David Hochberger. "Because we made a limited commitment of funds and resources, we can live with the

sales." Hochberger said. Despite early, promising sales, officials at catalog companies said they are looking at the long term before revenue on the Internet becomes significant -

"We're not talking about a lot of business here," said Joshua Tretakoff, manager of alternative media at The Sharper Im-

age Corp. in San Prancisco. "We're talking about \$1 million - total. A single one of our stores does that much business." The company has about go stores worldwide. Lillian Vernon currently earns

less than \$1 million per year in Internet sales, compared with \$240 million per year through paper catalogs. It doesn't expect to see annual sales of several million dollars for five to so years. Likewise, L. L. Bean, Inc. in Freeport, Maine, optimistically hopes to see online sales top 5% of overall sales within three

And it will be a long time before online sales actually exceed sales from the print catalog, if that ever happens, said electronic commerce executives. "That won't happen until well beyond my own career," raid Steve Roberts, a 37-year-old senior media

analyst at L. L. Bean. Emily Green, an analyst at Forrester Research, Inc., said items that sell well online inchade products that buyers like to research and replenishment

they can do well."

Mail orders account for 7.4% of general, apparel and furniture sales, up from 4.7% to years ago, according to Everen Securities in Chicago, Mailorder sales totaled \$74.6 billion last year, according to the Direct Marketing Association, an industry group in New York, []



down one of those variables, Paper or plastic?

goods, such as underwear or

button-down shirts, for which

going to a store and handling

But, Green said, figuring

art. "Merchants often don't un-

derstand what to offer, how to

offer it and who to offer it

out what sells is mostly a black

the product isn't important.

Chalegor any cellin sales alread more alleant continents that these who are already could not be continents to an airce challenge reveryd, propile who can excess be compared to the continents of the continents

stock goes.
And companies still can't always figure out why across things sell better online than on paper.

"Shoes are doing well," said Spingel spokeswomen Afficon.

"Shoes are think it's because Spingel has a wide array of sizes, and people come to us because they have use have hard-are.

international Male finds that lower-priced items sell better on-line, which is understandable if people are squannish about inter-net security. — Mitch Wagner

Apple spins off Newton

Apple Computer, Inc. last week spun off its Hewton onlt as a wholly owned subsidiery. The company, called Newton, Inc., will create handheld computers based on the Newton operating system. Newton could seek oth-or investors or pursue as initial public offering, Apple officials said. The Cupertino, Calif-based company apled Sandy Burett, vice president of the Neur uma Group, Neurton's chief operating officer.

Informix lavs off 100

On the heels of its \$140 million first-quarter loss, in mix Software, Inc. last week laid off 100 employees in the U.S. That followed an earlier dismissal of 60 workers at the database vendor's Japanese subsidiary. Officials at Meele Park, Calif.-based Informit, which had to comployees at the and of the first quarter, said it continue to evaluate the situation and take action

New York delays Lockheed pact

Officials at New York's Metrepolitan Transportation Au-thority (MTA) said it would delay voting on a Sos mi-lion information technology outsearcing contract with Lockheed Martin Corp. in Lanham, Md., ofter Mayor

olph W. Gizliani and other city officials criticized the deal. In 1994, Lockheed agreed not to bid on city contracts for four years after authorities alleged Lockheed had unfair access to top city decision-makers. Alugh the MTA is separate from the city governme the agency heeded calls from Giuliani to examine the ential impact of its contract on the city

Bills aim at ending spam

Two bills introduced on Capitol Hill last week aim to ninste spom, or junk electronic-mail messages. Under a bill introduced by Son. Frank Murkowski (R ska), Internet service providers could face fines if they let spam reach customers who ask to have it ocked. Separately, U.S. Rep. Chris Smith (R-N.J.) in-educed a bill that would ban spam outright.

Sutter retires from Rockwell

james F. Sutter, regarded by some as one of the top chief information officers in the country, retired last week as vice president and general manager at Rock-well international Corp. Sutter, 60, worked for 14 years at Rockwell after a 17-year stint at Xerox Corp. He will ion technology strategy at the University of South California and work as a consultant at The

SAP board cleared in probe

German prosecutors have ruled out any particips by SAPAG board members in suspected insider tra-at the company and are now focusing their leves tion on four SAP employees who had no direct action on four July employees whe had no direct access to inside information. Investigators have barried up no evidence against 71 SAP employees who the company said had direct access to death stut could have effected the price of SAP share, job Timano, spokemens for the investigation began after a possimistic company asta-mation of the company astamatic access to the company astamatic or ment on expected profits caused a 32% drep in SAP's ment on expected profits caused a 32% drep in SAP's there price on Oct. 23, 1996. Prosecutors initially said members of SAP's board and their relatives were suspected of being among the more than 100 people who made suspicious trades around the time of the

SHORT TAKES New area codes in California could foul up service for 15% to 20% of Pacific Bell's Integrat-ed Services Digital Network (ISDN) users, according ed Services Digital Network (ISDN) users, according to a California ISDN user group. Fan zere codes to be implemented in the next two years could cause connections to step working unless users measurily reprograms the equipment. ... Sony Electronics Corp. well urwell its next generation of PCs and perspherals and outline primes to converge multimedia, communication of the control of the contro

"You Won't Believe What We're Doing With COBOL."



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Transforming The Enterprise

No excuses for year 2000 projects

IS must stay on top of projects to make deadline

By Thomas Hoffman

wним тоо тниж about it many 15 systems executives say year 2000 projects are no different from any other large-scale technology initiative - and The average large softwa

therein lies the scary part. project - for example, an enter prise application developmen effort - costs twice its initial budget and is completed at least a year behind schedule, accord-



worldwide by the Financial Times in London and Owen Ltd., a research firm in the U.K. So where does that leave year

With an immovable deadline, information systems either have

to approach the milleonium problem differently from post projects or apply a best-practices approach, according to executives attending last week's Executive Technology Summit '97 here. The information technology leadership conference was asceed by the Society for Inrmation Management and Computerworld.

AROW FOCUS John Singel, a consultant at Price Waterhouse in New York,

said one way to avoid project "creep," in which projects con tirue to mushroom, is to keep the scope narrowly defined. The common message from

attendees was that year appop of other projects need sponsorship from the company's top execu-

tives in order to succeed The biggest problem facing year 2000 projects is "the lack of attention given to tthe problem] by senior management relative to other projects with the the business, said David Pessel, director of strategic technology and applications at Caliber Technology, Inc. in Akron, Ohio. Senior-level commitment helped AmerCable complete its shift from an IBM AS/400-

based manufacturing system to a Novell, Inc. NetWare-based system within its rune-mouth target in early 1996, said Don Hopkins, MIS director at the ensea cable manufacturer in

Senior management "stayed on top of the project from Day I to stare we hit all our deadlines, and it made all the differ

Companies should also leave themselves enough time to test converted systems. Many systerns integrate and are interdependent with other systems.

said Iim Love, an assistant vice president of 15 at ITT Hartford Group in Hartford, Conn., who retired last week. James L. Lamoin, another unsurance industry veteran who became a consultant at C. W.

Costello & Co. in Middletown, Conn., after leaving Actna Life Insurance Co. last year, recommended that one of his banking clients form a year acco project management team that draws representatives from the bank's legal and auditing

Year 2000 gurus say such team approaches are useful in tting commitment and fred back from different parts of the organization and helping firms identify their risks and legal es sures relative to customer and

partner relationships. Legal problems include lawsuits that could be filed by financial clients whose investments have been damaged or litigation by shareholders of companies whose software fails in the nex

Securities industry see

IT project leaders earn recognition

▶ Winners recognized for dedication to jobs

to B THREE years, Doug Heatherly of Masoo & Hanger Corp. frequently justed up to roo tasks per day to keep on track with an \$8 million re-environing project at the U.S. Department of Energy (DOE)'s Pantex plant in Amarillo, Texas.

This week, the project manager will be in New York to receive one of five 1997 Project Leadership Awards from New Yorkbased Applied Business Technology Corp.

The other winners - chosen from more than 6n nominations - are the following: • Jim Wagner, a project manag

er at Delta Health Systems in Altoona, Pa., who sent newspaper articles to educate upper managers and secure their support for a critical year 2000 pro ect. That was in 1995. Today, his team has fixed more than I million lines of code in 5.9nn programs, which are being tested for deployment next year. •Gene Dressler, who managed a 100-person team that devel-

oped fraud-detection software at GTE Telecommunications Services in Tampa. Fla. ojanet Vasak, whose 300-persoo team at government con-

tractor Science Aptional Corp. established a centralized cofesque develop ment factory at the U.S. Environmental Protection Agency.

• Julio Gonzalez. whose team at The Chase Manhattan Bank Corp. successfully merged two ustomer information systems that serve 600 retail branches and 3 millir

ers, following the Chase/Chemical Bank merger The winners will present their projects next month to attend

ces at the annual Project Leadership Conference in Chicago Top-norch organizational and communications skills - cosipled with an ability to promote projects — are key talents the winners share, according to managers who nominated th for the awards.

"It's easy to put in a new piece of software, but it's very difficult to get people to think about doing their jobs different

h," said Dave Michaels, the IS division manager at Mason Hanner, who rec-

Heatherly for the Among other

things, Heatherly explaining the project, completely overhauled the way the DOE tracks the assembly and

dismenting nuclear weapons. Hé also estab lished training for everyone volved in the project, Michaels

At GTE, IS director Ron Care atsa lauded Dressler for his ontime delivery of what had been the most complex software development project in GTE's hisover, throughout the project, GTE was in the midst of migrating to new middleware and upgrading its Tandem Com-

Vendors 'push' browser battle

MICROSOFT CRRF. and Notscape Communications Corn. are pulling users in different di rections to pick a "push" tech-

The two companies last week made competing bids to users to support the push technology platforms in their forthcoming rowsers, which are due for release this summer. Both browsers will offer mechanisms for receiving automatically updated

content in windows that sit on Netscape last week released to developers a beta version of Nescaster, the push component of

the Communicator browner. The Mountain View, Calif., firm also said Netcaster will be able to receive content developed by more than 100 provident for Castanet push software from Marimba loc. in Palo Alto, Calif.

Microsoft announced 12 content providers that will develop information channels for the vendor's Internet Explorer 4.0 browser The Redmond, Wash... firm also demonstrated how ad-

oet Explorer Administration Kit 4.0 to configure browsers to receive pushed content and to lock down the settings. The kit is due

out shortly after the browser. Both vendors are waging a pitched campaign to persua information systems managers and content providers to develop applications for their respec-

tive push platforms. Unique to Microsoft's platform is the Channel Definition Formut (CDF), a proposed stan-World Wide Web Consortium The CDF less users choose to download only certain pages of a site and only certain parts of a page. It also lets users schedule downloads and determine the

size of downloads Netscape officials said Netcaster will offer the same feabures as Internet Explorer 4.0. Netscape's push platform in based on Hypertext Markup Language, lava and lavaScripe - technologies that Netscape claims developers already accept new standard such as the CDF

James King, vice president of strategy and technology at pub lisher Reed Elsevier, Inc. in Newton, Mass., said his commamy will use the CDF to push content to employees over the corporate intranet and to customers over the Internet.

King said he liked the simple way that Internet Explorer 4.0 lets nontechnical users choose the information they want to receive. "Internet Explorer lets us not just out control in the manager's hands but in the hands of the end user," he

Netscape's Netcaster offers similar features for personalization, according to Neil Fox. manager of advanced development and applied technology at TRW Inc. in Cleveland For rest. ed Netcaster and said his com pany likely will use it. [7]



With (nost of 15
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Is this a great time, or what?



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Lotus, Microsoft to boost messaging

But Notes users may wait for later version

By Back Cale-Gamelsky LETUS WILL EXTEND the laternet hooks in its Notes/Domino messaging products, and Micro-soft will extend the scalability of

Exchange in upgrades slated for later this year. Lotus Development Corp. last week announced plans to deliv-

er Version 4-6 of its Notes client and Domino server in the third quarter and confirmed that Version 5.11 will ship by year's end. And Microsoft Corp. confirmed last week that the company will release an upgrade to Exchange - code-named Osmium - by war's end

For Lotus users, the 4.6 client upgrade means better Internet

hooks and an improved user interface. Domino 4.6 server will add support for Internet Mail Access Protocol (IMAP) and Lightweight Directory Access Protocol (I DAP)

But with even more substan ial enhancements on tan for Version 5.n., several large Notes sites said they would pass up the

There are some nice user in terface features in 4.6, but we'll

hold off until 5.n." said Dale Llewellyn, a senior scientific computing consultant at Smith Kline Beecham in Kine of Prussia, Pa., a large Notes shop. Liewellyn said the release could attract customers who are comring Notes with Microsoft Outlook or Netscape Communi-

IMPROVED MESSAGING WARES Lotus Notes 4.6 Calendaring enhance 03 10ET navigation pane for Notes app Lotus Notes 5.0 IMAP, LOAP and NNTP support Year's end icrosoft Osmium Lifts the 16G-byte message limit, improves LDAP support and support for IMAP

cations Corp.'s soon-to-be-released Communicator clients. The 4.6' Notes client will more closely resemble its rivals offerings in that it will include a feature, called portfolios, for

grouping frequently used Notes applications together "(Version) 4.6 is better, but s.o will be better yet," said Tom Austin, an analyst at Gartner Group, Inc. in Stamford, Conn. The Notes Version on client will support IMAP, giving remote users more flexibility in the way they download men

sages. It will also support LDAP

as a means of tapping in to di-

rectories and the Network News

"I had no shortage of head-

ed scalability enhancements. Microsoft product manager Dave Malcolm said Osmium will lift the current 16G-byte limit on mail storage. Malcolm declined to say what the new limit will be, but sources said it will be a roomy 16T bytes. 'The key thing [in Osmium] will be the increase in the [mer sagel store," said Al Mulnick, a

Transport Protocol (NNTP).

With Microsoft's Osm

sultant at Glasso Wellcome. Inc. in Research Triangle Park "If you want to put thou sands of users on a powerful server, the current 16G-byte lim-

it gets chewed up pretty fast." Malcolm said Microsoft users are expected to gain need showed a prebeta version of Opmium handling the equivalent of about a million messages per day at its recent Scalability Day

event in New York. The Osmium release will also support IMAP and add en anced LDAP support to let users edit directories. Also in the Osmium time frame, the company is expected to enhance Outlook, sts electronic mail and groupware dient. O

integrated messaging still more fantasy than reality. in Gaithersburg, Md., said he gets telephone calls weekly from

adhunters, vendors and con-

sulting firms that want to access

the institute's 3,000-member

mailing list. One Big Six con-sulting firm "basically offered

me \$1,000 a head" to steer ex-

perienced data warehousing ar-

By contrast, Rist said be

doesn't get many calls from peo-

ple looking for warehousing

probably already been found."

obs. "If you're good, you've

Some companies have given p looking and either hired

develop data warehousing skills.

For example, Sears, Roebuck and Co. turned to internal train-

ing because of the supply short

age and a decision that ware

using could be a growth path

But now. Sears is "finding

that our people have some very marketable skills," said Ryland

Harrelson, director of human

Estates, Ill., retailer. "They be-

come known (in the industry)

and get recruited away from us." To try to stay competitive.

resources for IS at the Hoff

chitects its way, he said.

high-priced consultants or tapped their training budgets to

Quick, hide the data warehousing experts

Compensation for full-time ousing personnel is topping the \$100,000 mark in me cases, according to 15 officials and technology staffing recruiters. Consulting can be even more bacrative: Topflight wareng consultants rake in between \$1,500 and \$3,500 per day (see story below).

kinds of headaches for employers. Companies that don't have internal warehousing skills face limited prospects and stiff competition in the job market. And companies that have built data warehouses are losing workers to external raids or the consult-

Consultants: Luring hig fish with hig backs

hunters calling me," said Brenda Moncla, who was in charge of data warehousing and other data management projects at US West Communications, Inc. in Denver until early last month. Moncla finally jumped at an offer to become an executive at Pine Cone Systems, Inc., a warehousing tools start up in Englewood, Colo. Part of her reason for making the jump was the opportunity to get an equity stake in the company, she said

Warehousing experts "are hot commodities, no question, said Chris Courim, manager of systems development for buss ness operations at MCI Communications Corp.'s mass markets unit in Denver. He runs a 60G-byte data mart that analyzes financial information

Courim's group used a mix of consultants and internally trained employees to build the data mart. Since it went into production, "we've lost some people and gained some," he said. "It's a process of give and take, and you're constantly working at it." The need to keep finding and training workers "substantially" slowed down development schedules,

Winter, Wyman & Co., a Wal-

Courin said

tham, Mass., staffing and plac ment firm that serves New England, has listed 137 warehousing-related jobs in the past six months. Nearly half of those



Staffing a data warehou ect is "a proo and take, and you're co

jobs - 67 in total - remain unfilled, said Brian Hoffman, managing partner at the firm's information technology divi-

"Right now, the demand far outweight the supply," Hoffman said. Experienced warehouse architects can command salariex that range from \$65,000 to \$115,000, he said And companies that normally moist that applicants know a specific database are wairing that requirement and offering to train people with warehousing skills on other databases.

Sears pays warehousing work ers between \$50,000 and \$95,000 in salary and bonuses, he said. [] War-Mart data miners Richard Rist, vice president of The Data Warehousing Institute

Token Ring switching activity picks up

MARGE NETWORKS, INC. became the second major vendor in a week to announce a Token Ring switch designed to extend the life of Token Ring LANs.

Mission-critical applications on Token Ring LANs need to go beyond sharing the available 16M bit/sec, bandwidth. The new switches provide dedicated bandwidth and protect users' infrastruc-

after Santa Clara, Calif.-based Bay Netrks, Inc.'s formal unveiling of the Centilion 50T. a 16-port Token Ring

Videoconferencer adds 'net product

By Matt Hambles

PICTURETEL COAP, last week jump on the Internet-based desktop videoconferencing bandwagon with its Live-

Analysts and corporate users said the Andover, Mass., company's move to In-ternet standards will boost desktop videoconferencing technology, which is still

taking baby steps toward business uses.

A desistop videoconferencing manager at Amoco Corp. in Chicago said the announcement has tempted him to test the ict. "PictureTel was very proprietary

before and was not a good mesh with Amoco's architecture," said Joseph Jesson, staff information systems consultant at Amoco. Amoco has used PictureTel's room

size videoconferencing products for sev-eral years in 37 sites worldwide, but it has ided on ProShare by Intel Corp. in Santa Clara, Calif., for a limited number of desktops, Jesson said.

He and several analysts said they are encouraged by features that let LiveLAN 3.0 interconnect with other Internet-based products that use the H.323 stan-

"We don't have a lot of desktop vid eferencing users out there," said Rob Enderle, a senior analyst at Giga Infortion Group in Santa Clara, Calif. "The biggest problem until recently was no interoperability, and now we've got a bunch of different videoconferencing compunies that can talk to each other.

NetMeeting a.o was announced last month by Microsoft Corp. in Redmond, laboration and videoconferencing. Intel has an Internet-enabled product, Internet Video Phone. Zwiacron in Manchester, N.H., last week joined the group with First Virtual Corp. in Santa Clara, Calif... to demonstrate the H.3a3 capability

NetMeeting 2.0 is free. LiveLAN 3.0 will begin selling next month for \$7,995 for five terminals and a gateway device. O

Other vendors are expected to follow

suit with summer and fall product launches, said Kevin Tolly, an analyst at The Tolly Group in Manasquan, N.J. and a switch module for its Catalyst 5000.

That is good news for users who were LAN switch in the second half of this

concerned that vendors weren't paying year. Both were developed with Olicom

plans to ship a new Yoken Ring switch

USA, Inc. in Plano, Texas

USA, Inc. in Plano, seaso.

San Jose, Calif.-based Madge's planned

Smart RingSwitch Plus has a 1.5G

bit/sec. backplane and can support up to 36 twisted-pair or 24 fiber connections. It can be equipped with a \$5,950 Asynchro nous Transfer Mode uplink for connec tion to backbone nets

The Madge switch is scheduled to si in August at \$750 per port when fully configured.



- In Usability: Trend Products Are Simpler To Install And Ma
- In Technology: Trend Builds, McAfee Buys Its Core Technology
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- In Windows NT Protection: Trend Hee NT Products At Every Level, McAfee is Missing Key NT Developments
 - 1 In Customer Priorities: Trend Specializes in Anti-Virus McAles Diversifies
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 - In Strategic Partnerships: Trend Products Are Re-Internet, Mail And Server Leaders, McAfee's Aren't





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hing of teeth.

Okey. We recognize that, while the release of new <u>Microsoft Office 97</u> may arouse the excitement of the general populace, you may great with, well, less than igne. That's why we've taken points to make sure Office 97 works hard for you, first and foremost. On the with the file format compatibility testings, you can make sure everyone's saving stuff in a format that overyone else can use. One step determines the setting, And when the time comes, one step moves everyone to the Office 97 format. The <u>Network installation Wixard</u> helps you customize and control offerent betch Equal post(ops for inferrent groups, and <u>Strams Policy Templates</u> levy outsomize the settings your people actually see. Finally, the <u>Usurante Wixard</u> new cleans out certifer versions of Office more efficiently, freeing up extra hard-clisk space (the fact that half of the code is shared among apps frees up even more). In short, we want you to be happy, We want you to visit us online. And we want you to be nappy, we want you to visit us online. And we want you to be nappy.

Shell Oil shifts safety data to intranet

Cost-saving move may establish industry standard

By Justin Hibbard

AT SHELL OIL CO., hazardous ch don't go anywhere without a safety sheet.

The company is rolling out an intranet application for creating and distributing "material safety data sheets" to employ-Now those safety sheets go anywhere the ees and perhaps customers.

Chemical companies are required to make the sheets - full of informatie showt the health hazards and flammabil-

ity of a particular substance - available to anyone who handles their products. Users and analysts said intranets are gaining popularity in the chemicals industry as an efficient and inexper way to manage the numerous safety sheets. Companies such as Air Products and Chemicals, Inc. may follow Shell's

Mike Salvino, a senior consultant at Andersen Consulting in Chicago, said companies can save as much as 20% by

distribution sheets on an intranet. Shell, an early adopter, expects its in tranet system to be cheaper and easier to use than its current mainframe-based

ticipate that we're going to see some cost savings," said Jerry Ramsdell, an industrial hygienist at Shell. "The mainframe system requires accounts [for each user who needs access, and we're constantly paying for those whether we're using them or not," With the intranet, departments will pay based on actual usage rather than the number of ac-

The Houston-based company codeveloped the application with American Management Systems, Inc. (AMS), a consultancy in Pairfax, Va. The companies chose World Wide Web technology because it can run on many different PC operating systems, said David Cogar, the AMS project manager

"Shell is a group of subsidiaries, each with their own computing standards and ClOs," Cogar said. "There was no way to deploy a client/ server system."

proprietary client/server system would have required developing multiple versions of a client application and re-distributing them every time the appli

cation changed, Co gar said, The intra net application is updated once in a central database and accessed through Web browsers, which

run on many operating systems. Widespread access to the application is key to satisfying the U.S. Occupational

Safety and Health Administration's (OSHA) Hazard Communication Standard, which requires distribution of the safety sheets. Electronic access satisfies the require ment as long as PCs are readily available

to workers, said Jill Hyman, a lawyer at environmental law firm Manko, Gold & Katcher in Bala Cynwyd, Pa. Shell's intranet application could distribute the data sheets to customers, too, but the company must be able to prove the appropriate data sheet reached the

oner by the time the chemical did. Web access logs could show that a customer accessed a safety sheet, but it isn't yet clear whether that will satisfy OSHA, Hyman said

Shell esti es it spent between \$1 million and \$4 million building the application. The company plans to re-coup some of the costs by working with AMS to sell the software to other compa-

Changes in corporate strategy that

notice is simula

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And the world's only end-to-end warehousing is solution for managing, organizing, and exploiting your business data—including data from external sources. Here's what two companies featured in the IDC study have to say.

MERRILL LYNCH ROL-1,484%
For this leader in financial services markets, the SAS

For this leader in financial services markets, the SSS basis Weenhouse periodiciti state perjoduci and measurable benefits. According to John Crawford, VP of Reporting Systems in the Marketing Systems Group. "We've been using SSS dentered to all our sections in terms of our data weelhouse implementation, and our return on investment has only grown... Its a broad-ecope, well-integrated coultion that provides all of our data wear-housing needs from one vendou, and there's no other sindex vendors out there causable or folion that."

LTV STEEL COMPANY PIOLE 6,989%. As the hid signed and operator in the U.S., they's been using SAS software for data warehousing since long before the term was coreas. According to Qualify Assurance Some Analysis Robert Software, "ASS definered as the designed services of the services." As the would have cost us maybe a half million dollers to bring contribute of the risk adds variety contributes of the risk adds variety contributes.

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Every second, every transaction, every customer counts.



Microsoft kit takes IS out of intranet loop

Network managers divided on decentralized control

By Justin Hibbard

MICROSOFT CORP. is taking its

way to start their own small intranets with the Microsoft Office 60 Minute Intranet Kit, which comes with ready-made Hypertext Markup Language (HTML) The software giant is offering users a page templates and instructions for cre-

The kit, available as a free download at www.microsoft.com/office/intranet/, was designed for small workgrouns that want to share documents created with Microsoft's Office 97 and its FrontPage 97 HTML page authoring tool.

Workgroup members can use a per-sonal World Wide Web server that comes with FrontPage 97 to serve documents stored on their PCs to other users on a LAN. Or they can store the documents on a stand-alone intranet server

Pete Skinner, manager of technology architecture at BC Hydro, Inc. in Vanco ver, British Columbia, said he liked the idea of a product that helps users create intranet content, but he had reservations about miniature intranets springing up around the company. "The small, independent Web servers are going to be a problem for enterprises because you can't manage the deployment," he said. Especially troubling to Skinner was the notion of users serving documents from their PCs. Systems could crash if users

request too many documents, he said. Also, Skinner said, making documents available only to users on a LAN defeats

the main purpose of an intranet.

The big plus of intranets is being able to link islands of knowledge," he said. You don't necessarily want to create islands of knowledge on the intranet."

Islands of knowledge are prec what Chevron Corp. is trying to over come with its intranet. "Everything that come with its intriance. "Everything that we're gearing toward is going to be cen-tralized," said Jim Nathlich, a technical analyst at Chevron Information Technol-ogy Co. in San Ramon, Calif. Nathlich said Microsoft's kit is too

small for companies such as Chevron that already have well-developed enter-prinewide intranets. But he added that it may be useful for companies that are just starting to experiment with the networks.

One such company is Siemens Corporate Research, Inc. in Princeton, N.J. Many employees at the research division of German science and technology gi Stemens AG are just beginning to d op intranet applications, said Ramesh Viswanathan, a Siemens systems analyst.

"We have an extremely nonstruc way of dealing with our intranet," Viswanathan said. "Anyone can publish their own information in our building."

Viswanathan said he isn't concerned about the growth of isolated intran Rather, he is pleased to see users learn how to create and publish content.

Structuring content from multiple in-anets is a project now under way at many companies, said Bart Meltzer, chief sologist at Intranet Partners, a conncy in Santa Clara, Calif.

"One of the major trends right now is ng these grassroots intranets ding an architecture," he said. O





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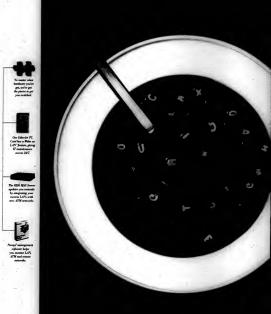
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Extranets may create extra knots for IS

ould hurt relations with critical ding partners

"If it's done wrong, an extranet is potentially much more damaging" than a simple inforational Web site, said Troy Eid, executive director of Infocrashes. Test International in Denues InfoTest is developing a massive anet for the manufacturing industry

Extranets are applications that let outsiders, such as suppliers or customers, into internal information systems via specially secured Web sites. They are less expensive than electronic data interchange (EDI) systems and, in theory, easier to build.

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But even savvy GE, which runs one of the most highly touted extranets. tripped on a political land mine. Besides letting suppliers who were chasing contracts see and undercut one another's hids, the forerunner to the company's Trading Process Network allowed bidding only during certain hours of the

You would see vendors online bidding against you at 5 o'clock. At 5:10, they cut it off. During that 10-minute time frame, you'd be frantically putting in prices," Wilson said.

GE learned that suppliers must be included in the extranet design process. Now bids are blind, and deadlines are rerealed days in advance. And

Wilson is happy. Other potential extranet pitfalls include the following: Business partners that aren't included in the extranet design team may sooms the company of playing favorites with other

The selection of certain extranet technologies could exclude husinesses that can't or son't use those technologies The extranet operator

may be liable for the loss of business operations at other companies if the extranet

*Training extranet end users at other firms is a never-ending chore. It's also dangerous to put IS workers who

are inemerienced with business issues in charge of creating an extranet. Decisions about an application that could become a critical oney-moving channel "are not to be made in isolation by the IT detment," Eid advised.

That's because extra nets, more than other technolony projects, put IS in a position to possibly sour business relanships, said David Annis, vice president of information technology at ITT Hartford Group, Inc. in Hartford, Conn. This is more sensitive than

it's ever been," Annis said. The fear is that zealous tech heads will create an extranet that may be technologically sound but is shot through with legal or business problems.

For example, a site that forces users to run fancy Java applets to get at needed information may upset companies that have banned Java.

SUPPORT BOOST ome companies have recruited business-side managers to, in

part, prevent business snafus in their electronic-commerce proj ects. For example, Mark Gal lagher, first vice president of technology admini stration at Chicago-based First Chicago NBD Corp., is a former investment banker. John Rudin was promoted to chief information officer at Reynolds Metals Co. in

Richmond. Va., after 30 years of distinctly nontechnical jobs at the aluminum unit. Meanwhile. Pruit of the Loom. Inc. had to play politics when it put up an extranet for its

highly competitive clothing distributors last March The Bowling Green, Ky., com narry wanted to include distribu tors in the design process, but it also wanted to would the Too.

many cooks" syndrome. When the company limited the number of participants. some excluded distributors felt slighted, said Patrick Flynn, vice sible for others to use, he said. InfoTest is managing an extranet pilot for Caterpillas, Inc. in Peoria. III. The test began

"If it's done wrong, an net is potentially more damanino' a simple infor-

biggest suppliers, 3M, but now Eid is searching for a middle-of-theroad supplier. The key is to make the extrapet accessible

ment at Fruit of the Loom. The ed technology know-how, said excluded distributors worried William Estrem, a manager at that chosen collaborators influ Info Test in Oakdale, Minn. The enced the extranet's design in more firms participating on the extranet, the higher the return To soothe raw feelings, Flynn on the investment, he predicted said he wants to get as many **But Estrem said extranet** partners online as quackly as he hosts shouldn't be overbearing can. Twenty-three are up so far. and make participation manda and another 12 are in the works.

MAKE IT EASY TO USE

their own favor

president of systems develop-

When choosing a supplier or customer to collaborate with on extranet design, look for an "average loe." Eid advised. An extranet built with your most savey tech partner in mind will likely be difficult or plain impos-

technology in the 1980s 'Gettine partners mad isn't a good idea, even if you are bigger than they are," he said Extranets also raise some unharted legal issues.

tional, Inc. in Burlingame, Calif. Two of the shipping company's biogest customers — Intel Corp. and Motorola, Inc. — are pushing it to make cargo information available to them through an ex tranet. The chip makers also want MSAS to massage the data into formats acceptable to their internal accounting and logistics applications That kind of extranet would.

nator at MSAS Cargo Interna

in effect, take over some of Intel's and Motorola's IS tasks. "We don't say 'no' to that because our competitors will say ves." Poznikov said.

But what happens if the site crashes someday, he wondered with one of Caterpillar's "Are we liable for that? Can they sue us for loss of business? Tight contracts are one an

swer, according to Chris Capuano, general counsel at Proxicom. Inc., a Web consulting firm in McLean, Va. Extranet to as many partners as providers should specify which possible, even those with limitresponsibilities they will shoulder for their users, he said But one contract won't fit all stranet partners, said Barbara Reilly, an analyst at Gartner Group, Inc. in Stamford, Conn.

cess is relying on fround-theclock| service and yours aren't. individual contracts will have to tory like when big retailers reaccommodate that "Reilly said. quired that suppliers adopt EDI Overall, the extranet notion seed as it is with the slam our of the Internet -- isn't to be taken lightly, she said. 'You are impacting someone's ability to

"If one party's business pro

do business, and both parties need to be real careful about be-Liability is on the mind of Euing dependent on each other in gene Poznikov, an EDI coordithat way." D



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Computer Industry

Briefs Bay's CEO makes waves with strategy

and president of Bay Networks, Inc., recently spoke with Computerworld Editor Paul Gillin and Senior Editor Bob Wallace CW: Describe your first six

months on the job after coming to Bay Networks from Intel Corp. HOUSE: In the first two months, we did a lot of listening. We launched to executive teams to visit 75 customers. We hired an external team to assess

ployee status and what we could do better. We used a third party to survey our suppliers. [The teams) came back and told us First of all, they said we've got strong technology, very good

people, a broad product line and phenomenal customer support. Our customers wanted us to win. On the other hand, they said we don't market well. We don't communicate. No. a. we needed unification of leader-

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closing share price

on May 9, the value

of the stock swap

with Aurum was

rate Fast Coast/West Coast companies. And they weren't sure what our strategy was. My job as chairman, CEO and president was to pull this company together That's a job that's com-

CW: Did you have a "My God, what did I set HOUSE: About one a

day! Any new job is like that, though. That's less and less the case. The compa is an entirely different company from six months ago.

CW: Bay has announced prod-ucts based on something called adaptive networking. Define it. HOUSE: The marketplace is moving to IP as a standard. That is creating a new kind of network with new kinds of services

CW: What are you doing to

and performance req

build momentum around adap-HOUSE: We've committed to

Industry observers said acqui-

updates - much more in-depth nondisclosure nessentations to con stomers about the pth of our plans. We have not been nunicating adesately with customers. and we intend to immouse that

> You've nced a let of plans for Q3. What are you going to do to pull all

HOUSE: In lanuary, I reviewed all our devel opment programs and what kind of resources

they required. Typically what I found was that most of the programs were about 50% staffed. We've (since) priorit jects, and we've killed

Adaptive networking is the half of them and moved reproducts and technologies that sources from lower-priority to transition you from today's to higher-priority projects. the IP-optimized network of to-

CW: What do you think your batting average will be on delivy over six months? HOUSE: I think a good ensi

neering organization should be

Baan/Aurum merger a harbinger

By Mindy Blodgett

THE BAAN CO.'S recent acquisition of Aurum Software. Inc. may trigger consolidation in the sales force automation market.

The Netherlands-based Baan provides software for accounting. human resources and other backoffice functions. Sales force automation leader

Aurum, in Santa Clara, Calif., manufactures there will be more mergers like front-office software that below companies manage their sales

is a sign of what is to come in the sales force automation space as more and more users and software that links all

custom-fit such solutions. Prod Before this acquisition, we ucts that integrate these funchad companies buying other tions are what the customers companies with complementary functions, such as two customer interaction software compaaccording to industry observers. mies," said Hugh Bishop, an an-

back-office ap-

plications. And

THAW YENT TANK ME' SVIC "Users are increasingly wanting

to link up their sales force soft

ware with functions like

shipping and billing," Bishop

said. "Currently, users have to

sitions and agreements between companies to jointly manufacalest at Aberture integrated software, prodeen Group. grams are on the horizon. Inc. in Boston. Sales force leaders Vantiv "This is an im Corp. in Santa Clara and Siebe portant acmosi-Systems, Inc. in Menlo Park, Calif., have been mentioned as tion, because it is linking likely candidates for a takeover front-office ap or a joint development agree plications with ment, observers said.

"Vantive has been cozying up to PeopleSoft," said Edgar Biedeman, an analyst at Dakin Securities Corp. in San Francis. co. "There will be more mergers and agreements, and that is good for the industry."

Been will build Java front ends for its applications.

Set for battle

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ton - multiple times even. With any luck, we'll be ting them money the same way they cost us time. Whom am I talking about? Span ers. Mes

junk-mallers. They arrogantly clutter our malibones, disrupt our workflow and hijack system resources. I recently tangled with mass mailer Quantum Comications over an enormous, boomeranging E-mail exchange. Here's what Quantum tells prospective cus ers: Massive E-mails are legal, senders have the right to be anonymous, and spamming is "less intru

sive" than junk postal mail. Oh, and everyone reads

his or her E-mail, so the only serious complaints come from "self-appointed ustight 'net com' who are werried about the cost of ction time.

ese junk-mailers really frosts me, I am sinking

ler the weight of E-mail, I can't function without it. and yet at times I can borely get functional because of it. I don't need electronic junk mail. Who does? Take the 11-screen message I got from the yutzes at

Quantum. Somewhere it noted that I can be removed from the company's list if I E-mail them. So I tried. But in my rush through 11 pages of garbage in the middle of more pressing E-mail, I sent my request to the wrong address. That mistake bought me six copies of a 90-screen message over the course of two days. That's 540 screens of drivel.

A call to Quantum revealed that the whole thing was my fault because I stupidly sent my requests for relief to the wrong addresses. He's right, I should make a habit of thoroughly reading all the unsolicited E-mail I get. Too bad real work gets in the way.

Lat's put a stop to this. Support a pending initiative from the Coalition Against Unsolicited Junk Mail, which is designed to allo soom into the existing lunk fax law. In the meantime, give the appenmers a response rate beyond their wildest dreams. With any luck, it'll either shut 'em down or hammer home the message: Cut the crap.





Help for carpal tunnel woes

o your March 17 issue, a reader wrote a letter about carpal tunnel syndrome (CTS). I agree that ergonomic computer furniture and accessories are no match for repairing the damage caused to the neural system

I recently asked 24 companies about reports of CTS. The number of reported incidents had significantly dropped from previous years. I could only speculate that workers who suspect they have contracted CTS feel they have little recourse short of surgery. We are a company that produces an FDAsanctioned. PC-based medical accessory that will facilitate neural resemeration. Our World Wide Web address, sowiepc-nexus.com, provides information about our technology.

Samuel Rosenfeld Medrotech Corp. West Palm Beach, Flu.

Virus hoaxes spreading?

BEAD WITH INTEREST YOUR Article make IS sick." CW. April 28]. The Good Times virus hoax made the rounds at my company more than a year ago, and I have received the warning, via electronic mail, from friends at other companies. I notice that Computerworld has not been immune. In the

same issue, another article warned of a macro virus called Sharefun that is automatically launched upon reading E-mail. As far as I know, there is no virus that can be auto-

matically launched just by reading an E-mail document - your vinus hoax article states the same

the upgrades

are bug fixes?

What's the story? Has a new type of virus been invented? Or did the article mean to say that the virus is carried by E-mail and can be launched by user action after reading? Christopher Powers

Fair Laun, N.J.

Year 2000 isn't that Picky

DESPLE SHOULD NOT ASS they are immune to year 2000 problems because their operati system or database stores dates in a serialized internal format ["2000 doesn't faze Pick," Letters, CW. April a8]. If all we needed was more space, the year 2000 prob lem would be a trivial one.

This problem is independent of erating systems and hardware platforms, and all computer soft ware that deals with dates is vulnerable. Think you don't have any code that does "IF (YEAR-o) PER-FORM INVALID-YEAR?" Think

> Keith Stone Burlington, N.C.

lore than a few reality bytes in Myhrvold's laws

T SHOULD BE OBVIOUS to anyo who lives with Microsoft's soft ware products that "Myhrvold's Laws" (CW, March 17) are anything but least for Microsoft. The ever-expanding

disk and memory footprints of the various erating systems and products such as Word support the "Software is like a gas" statement as a reality. Software product maturity would slow down or end the "Up grade oow!" spiral that fuels most vendors, but especially Microsoft. How many of these upgrades are actually bug fixes or inclusion of inctionality that was omitted from the last version? John Zielineki

Systems architect Innuesed IX

Laotons can't fly high until airline seating is expanded

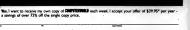
REGARDING YOUR STORY "Lap-top Impovations are airborne" (CW. April 14), it's interesting to read that at least a few of U.S. airlines are interested in providing better in-flight working services such as AC power outlets and

more versatile data phones. However, all of that will benefit aly those few who sit in first class or are lucky enough to get a bulk head seat in peasant class. Until the airlines expand seating space, the majority of us will continue to be unable to even fully open our notebook PCs - let alone worry about running down the battery or

ding data into the other. Jim Brow

esuth, Mick Computerworld welcomes ments from its readers etters shouldn't exceed 200 rords and should be ad-ressed to Maryfran Johnson Executive Editor, Computer world, PO Box 9171, 500 Old Connecticut Path, Framingham Mass. 01701. Fas number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number

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Should we use technology to automate or augment? Michael Schrage

arry Kasparov wants a rematch.

Not to worry: This won't be yet another epistemological exegesis on the deeper meanings

underlying Deep Blue's deep thoughts.

telligence - synthetic or au natural -

has been the most overblown element of this man vs. machine duel. The real story here has little to do with the artifiintelligentsia and chess, but every thing to do with the essence of computational design.



Kasparov's most intriguing comment about the match came well before he was humiliated by his number-crunching nemesis. He sald this would be a far fairer fight if he could use a computer as a decision-support tool. After all, IBM's team of software and silicon savants offered succor and support to Deep Blue; why not a PC for Garry? Behind the scenes, Kasparov and Frederick Friedel, his computer adviser, had Fritz - their very own chees-playing sutomaton - as a whicle to gain insight

Determining what to automate and what to augment is prowing ever more difficult.

into Deep Blue's synthetic chess-Writ small, the Kasparov question peatly captures the challenge facing

virtually every business in the world today: Does it make more economic sense to have people-supported automa tion, i.e., Deep Blue and its little hive of humans, or to invest in machine-sugmented people, i.e., a computerized Kas-

This choice is neither glib nor simp tic. It is stark and pragmatic. The automstion vs. sugmentation dichotomy has haunted computerdom from its earliest days in Bletchley Park, the Aberdeen Proving Grounds and the Bureau of the

Census. There is a deep strain in the computational design community that strongly believes economics dictates that replacing humans is far more cost-effective than amolifying them.

Clearly Tim Berners-Lee's image of the World Wide Web was built more on aug menting collaborate rather than automating

communication. The idea - and ideal that technology should amplify the individual rather than replace him also has strong roots. One can argue that

the past decade's bout of downstring has been a painful blend of automation facili tating layoffs on the one hand and tech nology augmenting the roles and reach of those who remained.

But what path makes the most sense for the most companies this next decade? Should companies commit to using technology to automate products, processes and competencies? Or is a hetter het to identify the best people who had the most value and use technology to make

them even more effective? In other words, should we try to automate our Garry Rasparovs ... or should we augment them? What's the investent? Perhaps this is a false choice because there are only a handful of Kaspa rovs in any given field. But there is an enplosion of ever better, ever cheaper digi technologies to embody the best of their

cognitive skill. This is the challenge being faced by every single global organization ever single day. Should our technologies auto male or sugment? What's our desig philosophy? What's the best mix? Perhaps our future consists of cognitive cyborgs - inextricubly intertwined and codependent on technological aids. Or marke it's Deep Blues, totally feeding of the expertise of their handlers. Maybe

they'll converge in the middle But if there is a business lesson to be learned from this faux John Henry man vs. machine confrontation, it's not that technology is getting "smarter" - if's that determining the lines between what to automate and what to augment is growing over more difficult and over more important. What's the biggest de-sign challenge for IS in the next five years, sutomating processes or augment ing humans? Write to me, and I'll write a column based on the results. O

Schrage is a research associate at the MIT Media Lab in Cambridge, Mass., and nuther of No More Teams! His Internet address is schrage @ media.mit.edu.

Apple could make a comeback by leveraging loyalty Patricia B. Seybold

ike most of you, I'm saddened by Apple's downfall. I'm no longer a Macintosh user, but I was, And I have six family members who still use

Macintoshes, although my husband's is a backup machine since he switched to a PC two summers ago.

I remember that summer well. It took troduce best-in-class products. I would him two months to adjust to Windows swearing the whole time. Then, of course, we both switched to Windows qs. And although Microsoft claimed this would be the most "Mac-like" of experiences, it fell far short for both of us. The Macintosh had, and still has, a lot

ing for it. The biggest thing is loyal, ehard customers such as my parents. son, daughter-in-law and brother-in-law. But has Apple ever communicated with any of these people? None, In fact, I'm pretty sure Apple doesn't even know who

If I had a company that was under a lot of competitive pressure, like Apple, I would do many of the things CEO Gilbert Amelio has done, I would cut costs. I would focus on core products. I would inkeep my prices low, without completely sacrificing profit margins. But first and foremost, I would find out who my loyal customers are, find out what I must do to keep them happy and loyal, and forge strong relationships with them. This isn't a business problem that mass marketing and advertising can solve. It's a business problem for which one-to-one relation ships are ideally suited.

Of course, given the tens of millions of customers Apple probably still has, finding out who they are could be a daunting task. But it's certainly not an incurrencemable one I'd start with the information I have - all those registration and warranty cards have to

be somewhere. There's probably a lot better use that could be made of that data base than simply selling the names to

Next, I'd offer rebates to my dealers and ellers for every valid customer nam address and profile information they give me. I'd encourage customers to register at my World Wide Web site finstead of charging them \$19.95 per year to join the Apple Club') by offering them benefit (discounts, advance software download)

etc.) in exchange

selves. I'd offer a ounts on the latest and grea



The Macintosh had, and still has, a lot going for it. The biggest thing is loyal users. al Macintosh users to stand up and be I'd combine all this information in a

stomer information database that can be updated and queried constantly and used interactively to generate custom electronic and physical mailings My goal: Make my loval customers prou defenders of the Apple way instead of having them feel sheepish and defensive about their choice.

Finally, I'd let my ov their Macintosbes directly from my Web site, s la Dell. I'd let them price, configure and buy their machines online

With the technology available to build esquisite customer databates, let cus tomers compose and maintain their own profiles and tailor their own Web experioces, communicate with cust used on their areas of interest, and build and deliver products on demand, there's no excuse for Apple to not reach out to its

What other ammunition does the compony have? D

Seybold is president of Patricia Seybold oue in Boston. Her Internet address is pscybold@psgroup.com.

Welcome to chapter two.

The new Pentium II processor. Read on.



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The 3% solution

DAVID MOSCHELLA

INCE COMING to power in 1993. President Clinton, Vice President Gore and the vice pres-

ident's old school chum, FCC Chairman Reed Hundt, have been determined to make their mark on the information.

superhighway. Consequently, the recent FCC decision to allocate \$2.25 billion per year to subsidize telecom munications services for the nation's schools and libraries is hardly surprising.

What's more noteworthy is the disconnect between the stated importance of the issue and the narrow focus of the proposed solu-

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tion. In his State of the Union address, the president indicated that universal Internet access could revitalize American education. Predictably, the White House now trumpets this plan as a big step toward that goal. Don't believe it.

Consider that \$2.25 billion is less than 1% of what America already spends on ublic education. The Federal govern-sent alone already doles out more than \$40 billion per year on grade-school education programs. Overall, the U.S. spends some \$6,000 per student. The new telecommunications plan adds about another \$40.

The FCC hopes that Internet access subsidies will jump-start the wiring of the nation's 100,000 public schools. It might, But Hundt and others largely ignore the fact that the price of a Tt or T3 connection is nothing compared with the cost of the required PCs, campus networks, software, installation, systems management and — perhaps most im etant - teacher and curriculum retool

If as the Gartner Group suggests, it costs \$8.000 or more per year to effectively support a corporate PC user, why should student automation be complete ly different? Let's say it costs only \$2,000 per student. Given that there are 45 milion students in grades K-12, this project would cost \$90 billion per year. By this calculation, the current bill does less

than 3% of the job.
If our political leaders really wanted to educate the public, they would tell us that there are only three ways that Internet use in the schools can become pervasiv Current education budgets must be substantially increased or dramatically reallocated. Or, much more likely, the total cost of computing must fall by nearly an

order of magnitude. Until then, groups that donate PCs or provide skills and labor will deliver far more 'net access than Uncle Sam That is why the White House is right to champion volunteer organizations such as Tech Corps. They might even cheer on Oracle's Larry Ellison for seriously address ing the cost-to-use issue. But they should never forget to stress that although comers are marvelous tools, they're in no way essential to a successful grade-school

Perhaps this is too much to ask. One could dismiss the hype if it didn't reinforce the view that our government still considers telecommunications revenue

as something it can commandeer at will Yet this same administration, which understands that computers and communications are converging, would nev-er dream of grabbing a share of the computer hardware and software business to fulfill its desired social aims.

Or would it? []

Meschella is senior vice president of research at Computerworld, Inc. His Internet address is devid_moschella@cu.com.

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TOP LAPTOP VENDORS

353.000 By Jaikumar Viiayan

THE RECENT LAWSOITS filed against Intel Corp. by Digital Equipment Corp. and Cyrix Corp. have once again focused the spotlight on lotel's competi tion in the microprocessor market - or at least what remains

ofie Digital claims Intel infringed on its Alpha chip design [CW, May 19). Cyrix sued Intel over copyright issues involving the MMX multimedia technology. It wasn't supposed to be like this. If everything had played out according to the script of a few years ago, Intel should have



had a lot of competition by now from clone vendors and makers of RISC chips

And users would have had an failed to emerge as a competitor to Intel because RISC vendors array of low-cost alternatives on their desktops from clone vendidn't get the volume or the ap dors such as Advanced Micro plication support" needed to compete, said Dean McCarron. Devices, Inc. in Austin, Texas, and Cyrix in Richardson, Texas,

Briefs Intel chugs on; Trucker speeds data rivals still lag recovery · Clone vendors may make run this year

and RISC vendors such as IBM:

Motorola, Inc. in Austin: MIPS

View, Calif.; and Digital in May-

Instead, Intel, with more than

minate the industry, and the

90% market share, continues to

mass-volume, low-cost options

that users were supposed to get

are only now starting to trickle

But powerful new chips from

AMD and Cyrix and the backing of vendors such as Compo Computer Corp. and Hewlett

Packard Co. could begin to give Intel some serious competiti later this year, analysts said. AMD, for example, has beg volume shipment of its h end K6 chips, which for the fi time gives users Intel-matching performance at lower prices

its Ma chip later this year.

mance, but they are getting into shape now and are starting to

cause Intel some competition.

Inc. in Hampton, N.H.

said James Garden, an analyst at

But "the RISC threat has

ology Business Research,

nard. Mass.

gies, Inc. in Mountain

By Tim Ouellette

ages the movements of 2,000 trucks and 7,500 freight trailers

writime can mean thousan

WHIN THOS data center man

across the country, half a day's That is a precarious position

for a firm such as Watkins Me tor Lines. Inc., which position itself as a premium provider of trucking delivery services but operates in the middle of Flori da's hurricane alley.

So Archie Simpson, Watkin manager of computer opera-tions in Lakeland, Fla., is testing IBM's SnapShot Copy, storage software that may be able to slash his firm's data recovery time from an hours to eight ng the firm thousands of dollars in the process (see chart,

DAGE 42). Plunging disk array prices, embined with a flock of new age software tools such as Storage Isols, page 42



Watkins Motor Lines is testing IBM's SnapShot Copy

And Cyrix is getting ready to do the same with faster versions of Laptops packing more bang "Intel-clone vendors have had a hard time re-engineering the x86 chip for higher perfor-

Laptop vendors bow to low end By Mindy Blodgett

LOW-SHE NOTEBODE comput er vendors are aiming square at the midrange laptop mark by keeping prices low while deering high-speed processors and other functionality.

Among the recent and ments were these: IBM PC Co., which built its notebook pres-ence by manufacturing highpriced laptops with cutting-edge technology, unweiled the Think Pad 380 line of notebooks that are priced at less than \$2,500. "They're a bit behind the oth er vendors here, but they [IBM] have come out with machine with a lot of features for a good price," said John Dunkle, an analyst at Workgroup Strates ervices, Inc. in Ports

Legislans, page 4

IS managers caught in storage capacity chase

By Matt Hamblen

ANNOUNCEMENTS OF the latest storage technology innotation pop up so frequently that IS managers and industry insiders have to stay alert.

Since 1995, there has been a 60% annual increase in the ober of bits of data that can

be crammed on a square inch of a hard disk for a drive selling at the same price, analysts said. In effect, the current annu rowth rate means the recordsetting sG-byte laptop compute drive announced May 15 by IBM could store to times more data in 2002, said Jim Porter, presi



Laptops pack more for money



N.H. 'The vendors are recognizing that this is what users. both corporate and retail, are looking for."

Texas Instruments, Inc.'s mobile computing drasion, which was recently bought by San Jose, Calif-based Acer America Corp., is shipping the Extensa 610CD line. The machines feature 150-MHz processors. Pricing starts at less than \$2,000 At the same time, in the mobile space, some corporate users are using personal digital assis-tants (PDA), or handheld PCs. for remote computing - at least

International Data Corp. (IDC) in Framingham, Mass., last week released numbers on the worldwide handheld manket. According to IDC, the handheld market will ship CS million. unita this year, a 77% increase over last year's 3.1 million.

nort of the time

IDC analyst Diana Hwang said those numbers are expected to grow worldwide to 16.2 million by 2001. Part of the growth from last year was fueled by the entrance of handheld devices that run Microsoft Com's Windows CE operating system. In the past few weeks. Hewlett-Packard Co. in Consillis, Ore. and Philips Mobile Comp

Group in Sunnyvale, Calif. shipped Windows CE devices, which provided a boost to the overall market. Hwane said. Some corporate users are coming around to the new devices. "Our sales force doesn't always want to carry their lap toos on the road," said lon-Sweet, director of information management at DuCharme McMillen and Associates, Inc., a

starting to look more closely at the PDAs and Windows CE devices out there

IBM THINKPAD 38D SERIES

Recent and expected laptop and handheld PC announce ments include the following: ■IBM ThinkPad 180 notebooks have 12.1-in, screens, 150-MHz processors with or sothout MMX technology and 16M bytes of RAM. Pricing starts at

The HP sooLX and saoLX palmtop computers started shipping last week. They run Windows CE and feature synchronization with deskton PCs. The units weigh 11 oz. and cost between \$499 and \$699. The Philips Velo 1 handheld PC none Wondows CE and few tures an internal 10.2K bit/sec. tax consulting services firm in modern and 4M to 36M bytes of Fort Wayne, Ind. 'The more RAM. It starts at \$739.0

Storage tools revise user recovery plans

CONTINUED FROM PAGE 41 SnapShot, are giving sites such as Watkins' a chance to redefine their disaster recovery plans. We just can't be down that progressive salesprople are

long." Simpson said. "We are required to recover within eight Instead of relying on timeconsuming weekly backups that

are sent to remote storage sites new software tools from leading disk array makers offer onlin movement of data to hot sites with minimal system down-

TICK, TICK, TICK.

120 20 \$9.435

Terri Stor last mask som an agreement in which Seagate Technology, Inc. in Scotts Valley, Calif., will codesign the flying

Same Conflict that See

optical heads used in the Neur Field Recording drives. Seagate officials also said last month that the company created a research and development program to expand the current hard-disk density limit of a 6G bit/sq. in. to roG bit/sq. in. and

Poster said the race for dansi ty will be furious until storage engineers reach what is known as the superparamagnetic limit of about 40G bit/eq. in. That is a physical limit beyond which the can't remain stable at room tem perature. Given current growth trends, engineers will hit that

wall around 2005 to 2010, Por-

per easid IBM scientists at Almaden Research Laboratories in San lose and a consortium of ven dors working at a dozen major universities are conducting expenments to break through the superparamagnetic limit. Porter said. For example, scientists eventually may use holography to store data in three dimen sions instead of two dimen-

Such tools include IBM's SnanShot, EMC Corp.'s Data Reach and TimeFinder, Hitachi Data Systems, Inc.'s Extended Remote Copy and Amdahl Corp.'s TDMF

Most tools are tied to their vendor'a own disk arrays ICW, May ral, but Amdahla TDMF lets users move data among different vendors' disk arrays. Ameri can Stores in Dublin, Calif., is one site testing TDMF in that

Users often depend on disas ter outsourcing contracts that provide business recovery with

data that may not be up-todate, because the copying and transfer tools haven't been 'Now, with Idirect access storage devices] so cheap, we are

looking at doing remote mirror ing," said Stan Beck, a data on erations manager at Phillips Petroleum Co. in Bartlevelle

By off-loading data quickly to a mirrored site, analysts said the tools also let week

better test their data recovery capabilities without eriously affecting ongoing produc on operations.

Phillips ships hundreds of backup tapes daily to

its remote site. Its last business recovery test took 16 At Watkins, a

data "snapshot" is being taken only each weekend, but soon snapshots will be taken three mes per day, Simpson said. With two high-speed data channels, Simpson can back up 27 volumes of production data

n four hours. In August, a field upgrade to Watkins' IBM Ramac Virtual Array could help Simpson mov to eight high-speed data paths and cut the time even more. But there are still catches sers must watch out for be-

sides the next storm or disaster "Line speed is the issue right now," Beck said. "We need to wait for the (network) lines to catch up to the disk systems

IS managers caught in 47,000 analog images by using storage capacity chase

dent of Disk/Trend, Inc. in Mountain View, Calif. - The pace of change means de

makers have to weigh the need to stay on top of these storage innovations while hedging their bets against the obsol cence of new purchases, users and observers said.

"We don't want to obsolete ourselves if the storage capacity is going to be suddenly doubled. so we ask the vendors what they're doing," said Ken Sliwa, a cipal application specialist at The Arizona Republic daily vapaper in Phoenix.

Sliwa said he also wornes that while storage capacity is grow-ing astronomically on all types of media, the technology to pro ride speedy access to stored data may not improve as quickly.

But Porter said storage ma agers shouldn't delay a project or equipment acquisition be cause a new storage technology is on the horizon. 'An 15 director should know that he has to

buy what's available in the win dow for a project," he said. In one unusual innovation Norsam Technologies in Los Alamos, N.M., recently announced it is developing the Norsam High Density Read Only Memory (HD-ROM) drive. which reads off a Pancake Disc,

lar in size to a CD. The technology promises to hold up to 650G bytes - 1,000

"We don't want to obselete ourselves if the storage capacity is going to be suddenly doubled, so

they're doing." - Ken Sliwa.

The Arizona Regul

a focused son beam to indelibly etch a long lasting disc of stainless steel and silicon Norsam President John Bishop said the first digital HD-ROM devices should be ready in

1999 and will benefit users who need a long-lasting storage medium for data that doesn't need to be changed. Analysts said there will be a long-term storage market for write-once, read-many-times technologies such as the HD-ROM. And the HD-ROM tech-

nology is physically more dura-ble than CDa, able to withstand fire and rugged conditions. "People are always looking times the capacity of a CD - or for a truly durable archive tech nology and this seems to anower that problem," said Nick Allen, research director at Gartner Group, Inc. in Stamford.

There will be a wider market for innovations in read-andwrite storage, analysts said. One such product, the Near Field Rewe ask the vendors what cording drive, is under develop ment by TeraStor Corp. in San Jose, Calif., It promises to times the current bit density of any product and should be ready to ship early next year, company of Monkey on your back #55: If you're into Windows NT, why not find the company that's most on top of it?

DIGITAL has consistently been first to market with added-value deliverables for Windows NT.* No other company cut offer so much:

The DOUTAL/Microsoft alliance. Our unique, long-term alliance bas given us more bands-on experience with Microsoft than any other rendor. For instance, we now bave more trained and certified Windows NT experts than anyone cite. And we already have over 900,000 seats for Microsoft Exchange under contract. It's this kind of service, support and experience that gives you a distinct

Romarkable reliability. DIGITAL was the first to bring multisite disaster-tolerant computing and maximum availability to the Windows NT market. In fact, we're already on our second release of DIGITAL Clusters for Windows NT while others are still working on their first.

competitive edge.

Extraordinary autorprise expertise. DIGITAL also boasts two decodes of experience in enterprise-level computing and multireador integration. Which probably explains wby we're the only company offering middleware that allows seemiless interoperability between Windows NT, Open VMS⁵⁵² and UNIX.⁵

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So if you're running Microsoft

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Object Supposed Companies (ANY SIGNAL), the DESTER hape Case (ME), and they begin through an emphasis of Object Supposed Signal Signal

Apple hardware plans center on upcoming 'G3' PowerPC chips

APPLS COMPUTAS, INC. plans to deliver new desktop, serv and mobile computers to coincide with new PowerPC processees due to reach soo MHz by

Apple offered glimpses of its are road map at the recent World Wide Developers Conference in San Jose, Calif. Company officials said Apple

has several initiatives to improve performance, multimedia nectivity that span its product spectnum

tems introduced that

run at speeds of up to 400 MHz. said Phil Schiller, vice president of desktop and server marketing at Apole in Cuperti-Apple also plans to release a

new Enterprise server and a new manitower server. Both will use the G3 chip running Rhapsody, Macintoch users during the Apple's next-generation operatnext year can expect to see sys- ing system, due in the middle of

next year exploit the yesto-be PROBUCT Users also can released "G3 family" Users also can look forward to new of PowerPC processors, which cache designs, multiprocessing

end Windows NT desktops and

MIPS' chips are the highest

selling among the RISC ven-

does. But almost all the volume

has come from the embedded

applications markets and from vendors of technical systems

such as Silicon Graphics, Inc.

Microsoft has dropped Windows

capabilities, faster Peripheral Component Interconnect bus architectures and revamped memory and I/O management. all to insprove performance of all products.

Schiller said all desktop and

ems, card buses for high

One information systems that promise, we might not leave," Eide said. manager, whose company is considering a move to Windows Apple also plans in the next 12 months to improve its network PCs, said if Apple delivers on those promises, he might have a good argument for sticking with

erver models roon will comthe Macintosh. Norman Eide, MIS manager standard with 10/100Base-T at American Eagle Insurance network connections and the Co. in Sacramento, Calif., said Universal Serial Bus. Apple needs to offer more cross For Apple's portable lis platform capabilities and im-proved performance to win in-PowerBooks will include built in Fibernet connections and terest among businesspeople

and the "techie and engineering speed connections, up to AM types" at his company. rytes of infrared memory and If Apple told a compelling Apple Location Manager for users to customize their remote access configurations. engineering story that we could buy in to and then delivered on

Intel chugs on, but its rivals still lag

an analyst at Mercury Research, Inc. in Scottsdale, Ariz.
"And while [Intel-clone vendorsi have done a reasonable job competing against Intel, they've had issues relating to design and capacity," that have kept

them from emerging as major players, he said. As a result, most of the vendors that seemed poised to grab market share from Intel as recently as two years ago have either stopped competing directly or are only now beginning to have

the products and the capacity ed to compete. wing are examp "The joint IBM, Motorola, Ap ple Computer, Inc. PowerPC chin, which was once touted as a ass-volume RISC rival to Intel, is today largely restricted to IBM's servers, computers from Apple and a handful of second-The chip so far has failed to

attract attention from mainstream PC windows, mainly because of a lack of application software - which is one reason Microsoft Corp. recently announced it is dropping Windows NT support for the PowerPC platform.

*MIPS Technologies' RISC chip has suffered a similar fate.

NEC Corp. in Japan in high-

NT support on MIPS' chips, too. Clone vendors such as Cyrix and AMD have struggled in the past couple of years with missed dlines and capacity issues. AMD, for example, was more than a year late in coming out The chip, which, in theory, ofwith its Ks Pentium clone/ Cyriz, which doesn't have its fered far greater performance than Intel's Pentium chips, was notitioned by vendors such as own fabrication plants, has been struggling to prove it can meet

order demands.O

(908) y₃6-8880

170/m color monitor.

rint electronic-mail messages

The HL 1060 costs \$799.

TELEVIDEO, INC. has announced

the SVato, a high-resolution

According to the San Jose,

Calif., company, the SVato is a

flat screen monitor with a dot

Smart card standards group

IBM and Sun Microsystems, Inc. last week joined an indi-effort to develop a common senart card standard for net-and personal computers. The PC/SC Workgroup, formed year and boased in San Jose, Calif., also includes Microsoft C and Huwlett-Packard Co.

Axii demos SMP for Windows NT

pertor, Inc., a Santa Clara, Calif.-based suboldlary of Hyundai Electronic America, but work demonstrated in objectively way symmetrical multiprecassing (SMP). Windows MT serve based on lintel Corp.'s microprecasors. The NX Box system uses a patiented crossher technology to connect the precasor in an SMP configuration, according to Anii.

Java-based smart cards

Schlumberger Electronic Transactions in Meconstrom, N.J., has released a tool salle for creating jurn-based smart cards. The Cyberline Development Elli is the first such package to support Sus Microsystems, Inc.'s Jove Card application programming interface. The package includes a card reader, cards and soft ware to correct and load jove applications onto cards and soft

Acer Pentium II PCs

Acer America Corp. plant to offer a line of PCs based on intel nor antesta Corp. pions to offer a line of PCA based on inside Corp.'s new Penlim III processors. The Sain Jone, Calif., com-pany's line of Acceptives destrops is available now. The PCA come oppligad with network interface cards, soci-lens chansis access and a three-year warranty. The company will also offer an Acceptive Complex Workstation, outputed with a self-shift Puntium II processor for high-and unare. The PCA and work-stations range from less than 51,000 to blood \$5,000.

HEW PRODUCTS

OVERLAND DATA, INC. has ansounced LXS, a compact mini-sbrary for digital linear tape. ng to the San Diego ompany, the library will pro-

vide up to sooG bytes of carecity. It has a single drive and can perform backup at up to 18G ytes per hour. The LXS costs \$8,495.

ford Da

LEXIMAN INTERNATIONAL, INC has announced two Optra SC

color laser printers. According to the Lexington, Ky. company, print speeds for the Optra SC 1275 and 1275N

are up to 12 page/min. for black and white and three page/min. for color. Standard Brother International atures include ColorSharp inement technology and 600- by 600-dot/in.

image quality.

Pricing starts at \$4,000.

Lexmark international

o6) 232-2000

as announced HL-1060, a usiness graphics laser printer. According to the Somerset. N.J., company, the HL-1060 has a to-page/min. print speed and 1200- by 600-dot/in. reso-

pitch of .a6mm. It was designed for use with PC and Marintoch nesterns The SVaro costs \$168. (408) 9534-8333 hation. Users can automatically

It was supposed to be the launch of a development project...

Not the project memoger

Should've used UNIFACE

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Sure, being number three is tough. But we think it



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Software

Briefs Jumping on application response times

► Tools shorten troubleshooting

By Patrick Dryden

SOME SAVVY information sys tems managers seek shortcuts to troubleshooting poor performance from vital client/server business applications.

They want simple m tools that reveal relevant infor mation about all aspects of their distributed applications - the hardware, software and network pieces of the enterprise puzzle. They then could get a jump

on fixing application response times for users without having to follow the usual approaches Those include forming a team of experts or adopting new tools such as an integrated management suite or one of the new service-level monitors. But each can consume time, money and expertise.

'It takes a couple of hours or a day to set up an investigation after a user call," said Mike Ault a renior consultant responsible for database administration at ReliSouth Business Systems in oper to concentrate on business

logic how an application can help a company sell more widgets, build more cars or send

Users and analysts point out that the infrastructure, or the plumbing that allows applica-

tions, clients and servers to unicate, takes up about 70% of the time it takes to build nuccessful applications. Cut ou Atlanta. "Then we have to track Ault monitors the specific performance of his Oracle Corp. databases with Q Diagnostics Center, a graphical tool from Savant Corp. in Rockville, Md. He can't watch the network, but he checks the basic performance of each server and operating sys-tem that supports those databas-es through Patrol from BMC Software Inc. in Houston

'I'd like to see all that info nation in one place, without having to be an expert," Ault said. With some indication that the network has a bottleneck, for example, he said he can quickly

narrow his focus. Ault said he looks forward to a significant expansion of O Diagnostic Center in October. Ver sion 2.0 will include in its over view of database functions

several relevant statistics regard ing network throughput and system activity.

If Savant delivers on its pron ise, Ault said, "then we won't have to start from ground zero every time." To help assure the quality of

A Darwinian leap past the visual

App developers await time-saving tools

By Sharon Gaudin

naagiawn nao'r canabilities that have emerged in just the nest two were have diminished developers' need to write code. significantly accelerating the applicationbuilding process. They were a huge

step in the evolutionary chain. Now, fourth-gene ation, visual drag-and-drop development languages are commonplace in the developer

world. So what's next? Looking to the next Darwinian lean, users and vendors are focusing on tools that automatically build the applications' inthe need to build those conne tions, and applications coul rocket off the drawing boar and onto workers' desktops. ing our application developes to focus on increasing business value for our users instead of worrying about the connec-

> planning at San Fran-cisco-based Charles didn't have to build

there faster. We'd he first." Karen Bouchez director of The Standish Group Interna tional, Inc. in Dennis, Mass.



Oracle addresses end-user training with do-it-yourself application

By Julia King

ALL BRITS APRIST SOFTWARE VED

charged with implement

new applications. Training end

By has been left to high

priced consultants and outside

Oracle Corp. in Redwood

Shores, Calif., is breaking that

mold with Oracle Tutor, a soft-

ware-based end-user training

last week, the build-your-own

training application promises to significantly reduce the time

velopment kit. Announced

ers, on the other hand, typi

day users of Oracle's financial and manufacturing applicadors offer technical training for nformation systems teams

That's because users learn only those portions of the soft ware they need to do their jobs. And all training materials are reusable and can be modified as a user's job duties change

For example, filling out an expense report could be a 15-step process. "With Tutor, lend users don't need to go through a five day Oracle class, but fust look at those steps that affect them," said Mike Alfano, director of applications education at Oracle





New York City





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Grant me the strength to resist fade, The wisdom to recognize legitimate plans, And the abeer billed lack to knew the difference.

The IS Manager's Prayer

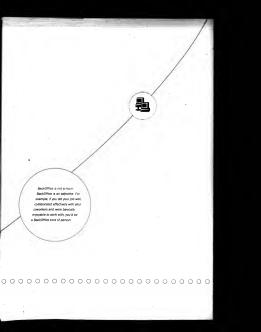
So, what makes BackOffice different?

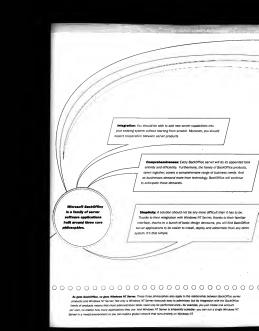
Now, for the first time, we can offer you not just another bunch of application but a same and sensible approach to evaluating technology solutions. It's call Microsoft' Back/Office' and it delivers something you probably don't expect from technology—simplicity.

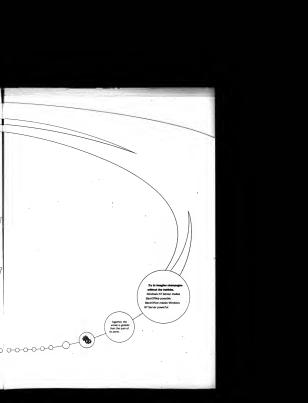




system you might have in place flow cent add a single Wordpee NT Server into your Nectives or LINE servicement and start running a Back/Office-based subject or better and Windows NT Server is termandicually scalable. So you can actually more the rectificingly foreign in well-planted states, included of the white accusals, all co-months (along its people are frequently forced or make.









What about the Internet

For quite some time now people have been pomissing you that the intermity-finance visual change the may you do business. But they never explained not have the see apposed to happen. Moreout files-LOTKino provides a marge of software solutions that not make a limit and solutions of a provides at all vision of Internet and intranset functionally flowing poople access is searce. Cheeping likely well, sales is easier. Cheeping an extreme for your outside which is easier. And that make it seems to decide on a likely has easier. And that makes it seems to decide on a provide source.



Well, what about R7 Microsoft Windows NT Sorver has an interest site large bed in R5 called interest, information Sense. It for you create, deplay and administer a length Web als or a fulfablem opporter strongs, likes people in your organization where it will response to the information of the indications or entering systems using a standard abover. 85 including larger Source Proprint using a standard abover. 85 including larger Source Proprint using a standard abover. 85 including larger Source abover. 95 including larger source interesting software of the interested on the Medica Larger source abover.

www.microsoft.com/backoffice/

There is a BackOffice product for every business problem we can name. When you come up with more problems, we'll come up with more BackOffice solutions.

Indows NT Server

This is a multipurpose operating system capable of handing applications, file-and-print, communications and the Web. Il includes informed information Server, a powerful framsaction server and DNS server. And, by the way, it's the operating system that makes BackOffice work. We believe it is the future of interior compound.

schange Server

The is an internet standards-based server that delivers powerful messaging and collaboration capabilities. More than e-mail, Microsoft Dichange Server gives you business solutions like scheduling, group contact last and lask management.

M Server

This tremendously sociable, high-performance RDBMS features Internet integration, Integration with deskings tools and applications, and an open-system architecture, making it a superior platform for relationship line-of-business and fatts warehousing handlings.

ystoms Management

This allows you to centrally manage and troubleshoot your entire PC network—dealtop and server computers. You can amentary hardware and software, deliver new software and perform diagnostic services—and from a single location.

SMA Server gives PC network users rehable access to host systems—from AS/400 machines to large mainframe systems. SMA Server can be used to support line-of-business applications like decision support, Internet/Intravet access and online transaction processing.

Proxy Server allows you to extend secure Internet access to the entire organization, sessly and cost-effectively.

. .

We are working on new some robustons and technologies right new—increasingly apphasionated online commerce obustions, for exempts, and the next generation of book for the rand creation of nich likely sets and likely-based pointers applications. To van convoir on series giftee and other new likels but into BasicOrfice with the same attention to integration, comprehensiveness and simplicity that their our current ordious's soert.

.

Microsoft

Where do you want to go teday?* There is a vision range of products in the BackOffice family, You can get them in two different ways. One-stage get the BackOffice Sorver suith—including Windows NI Server, Exchange Sorver, SQL Sorver, Systems Management Sorver and SNA Sorver, Plath-and-chances get any individual service or combination of server socronsity to white you need and when you need at I.



Baan heeds call of the Internet

By Randy Weston

THE BAAN CO.'s recently un veiled Internet strategy calls for building lava front ends for its entire package of applications, starting with the supply-chain

The Netherlands-based software vendor also will tweak workflow functionality to handie Internet technology and create independent World Wide Web-based software that users can link with any software

Users demand the kind of functionality that Baan hopes to ovide — Internet-based applications for supply-chain manement and other busin critical functions, said Ed Black, an analyst at Aberdeen Group. Inc. in Boston

Our clients "don't want just self-service and business-toess uses, but want to use the Web as a way to extend their value across the enterprise," Black said.

Baan is concentrating its initial efforts on tools that will let users open up their inform systems to better collaborate with suppliers, consumers and

One piece ready for delivery on Microsoft Corp.'s BackOffice

platform provides Internetready electronic-commerce applications that let users open up information such as order inquiries to key suppliers. A Unix

version of those applications is due by the end of the year. The applications let users' customers or off-site salespeople place customer orders via a

The full suite of Baan applica tions will be ready for the Web with the Baan V application package, which also is due for general release by the end of

INO" ALONG Baan developers are also trying to take advantage of "push"

technology through self-service applications that push information such as financial reports over the Internet to key employ ees, partners or con Bean's plans call for a workflow module that would use nuch technology to manage order-entry and requisition ap-plication processes such as or

der placement, credit checks or

product-availibility checks. O

Developers await language leap

Observers said that in the

ext six months, new tools and add-one to existing products such as Microsoft Corp.'s Visual Basic may include auto infrastructure-building capabili-

User companies are starting to rely on cross-platform appli cation-building architectu Request Broker Architecture (CORBA) and Disauted Component Object Model (DCOM) - a

trend that could help move things along, ob-CORBA is indus

plumbing that has picked up some serious mon nost few months, IBM, Sun Microsystems, Inc., Oracle Corp. and Netscape Corr Corn back it DCOM, Microsoft's rival architecture, is Win

erating systems. Boucher noted that some high-end application develop-ment tool vendors, such as Forte

ware. Inc. in Oakland. Calif. and Dynasty Technologies, Inc. in Naperville, Ill., have tools that automate some of the infra structure work. But she added that those products are costly. and Forte locks companies in to a proprietary infrastructure Users said they prefer st

dards over proprietary infra-structure models.

James Chong Charles Schwab

"What matters is solving the ectivity problem — linking the front end to the back end.

If a controlling the chaos. If I can get a tool that will take care of that for me, I say terrific said lens Hanker, an application ows-specific but is being ex reloper at Swiss Bank Corp. in Basel, Switzerland. tended for several other servers said IBM is on the

upowing of this tech curve. Two weeks ago, IBM an ware products that combine ap-plication development, transacon processing, messaging and management in one package [CW, May 19]. The two products use object-oriented technology to take care of many of the infra-

Peggy Ledvins, an analyst at fets Group, Inc. in Stam ford, Coun., said pop application developm tools such as Visual Basic Visual C++ and Sym Corp.'s Visual Cafe may head in that direction in the not-so-distant future. Users and analysts

agreed that because there is no standardized way to build an infrastructure, the first to to get into this market probably will be designed to link up with a company's infrastructure and then clone it into the application

When, and if, compa such as CORBA or DCOM, at on developers could buy ools with their chosen infra sucture already built in. D

Troubleshooters seek app managment shortcuts

EW PRODUCTS

CONTINUED FROM PAGE 47 lication service at ABM AMRO Bank in Chicago, sys-tems officer John Pittas tried a

tool that dissects a client/server Application Expert from Opti-

rowerks Corp. in Palo Alto, Calif., reveals where pack-ets slow down. It shows latency in the client, across the netw

Now when we roll out new applications, we know in advance the best response time us-That helps avoid nasty surpris when developers tune soft ir LAN without consider ine delivery across slower WAN Specialists in one IS as

in't worry about getting ove aded by another group's in mution as long as it is rel vant and easy to unders They do worry, though, about it vesting in large-scale manage ment suites and performance

We don't want the lices ag and mair es of a big tool," said Ne assigned to a major manufact er by MCI System House, It

Adding new information to ar tools saves time and ex pense, Greene said. And many enterprisewide tools require a database for correlating and archiving performance statistics that may differ from the data-base chosen for in-house applions. "Then we have and ck end to back up and to tain on top of everything else, be

Oracle tackles end-user training CONTINUED FROM PAGE AT

Tutor includes authoring and ablishing tools as well as a re-sitory of Oracle courseware ects and more than 100 standard business processes. Pric-ing is \$30,000 per module, plus Siyo per user. Tutor modules correspond with Oracle's 11 fiscial and manufacturing ap-ation modules.

Using the authoring tool, inactors create custom training by selecting courseware objects and linking them to basic business procedures, such as initiating a purchase order or process-

Developers can also add non-Oracle information to the repository. For example, companies that use PeopleSoft, loc's hu man resources software can in-corporate PeopleSoft materials into users' individual training

pleted, users can continue to access the material from an online reference manual produced with Tutor's publishing tool Manuals also can be updated as This is a big benefit, accord

ing to Christianne Moretti manager of information technology training and education programs at Intern Corp. in Toronto What a lot of compenses

save now is a manual on their desk, and nobody uses it," Mo-retti said. "With this, if there's a corporate reorgani can change it. This makes it a living document, which people can use," she said. 'The payback is that they're

iving users a tool and not just a consulting service," added Karen Moses, an industry and yst at Aberdeen Group, Inc. in RETRIBUTE RESTRIBUTED TO ADDRESS OF THE PROPERTY WINDOWS 95- and Windows NT-based protocol analyzer and network troubleloos gnitoo

lis company, Observer 4.0 lets users monitor bandwidth use, collect statistics, decode LAN traffic and set triggers and

PROBUME SOFTWARE, INC., has announced Individual Training for Office 97. a mitte of cor-The suite's user interface es the Office 97 cm

and time slice analysis charts

ent to help con ing departments become cient in Office 97 app ns across the workforce, rding to the Pleasanton,

Pricing starts at \$69.95.

Hot Shot.

The COI dad, He me see if I've got this straight. You're sering you can implement a varietable storage options that will actually increase the company's performance and reduce costs? Without skipping a bast, I see said, you have along view to show me how." I remember the day Storagelier presented their recommendations. Securise that was the first right? I actually got some sleep."

Cold Storagelies tood, at 18 do 1847-1850. O'ver the contribution of the contribution computing, the right choice in storage can mean the difference between proving yourself every day — and proving yourself once and for all.

The Enterprise Network

LANA . WANS . Network Management E-mail and telephone ext

Briefs You can't

integrate messages

Unified voice, E-mail

systems face hurdles By Bark Cole-Gomolski

YEARS AFTER vendors began talking about it, integrated messaging is still more fantasy than

reality at most companies. Integrated messaging systems let users access electronic mail, voice mail, faxes and pages from either an E-mail client or a

Vendors tout the technology's ability to make workers more productive because they can, for example, check E-mail from an airport telephone. These systerns may also lower administration costs by letting companies

phone charges. "I know we are more prod tive now — maybe by as much as 20%," said Bob Manougian, vice president of operations at Paralon Technologies, Inc., a Seattle-based provider of remote access products that is deploy-ing a unified messaging system from Active Voice Technology.

Inc. in Kirkland, Wash. Paralon didn't have a legacy voice-mail system to replace, which eased the migration, Manougian said. BARRIERS REMAIN Although users give integrated

messaging systems high marks, evolve as the network technolthere are still barriers that prevent users from colling these products out on a large scale. First, most large compan have E-mail and voice-mail sys

terns that may not work with universal messaging products. Second, some integrated messaging systems, although de-signed to work with client/ server mail, don't yet support maintain one directory for You can't, page 52

GLOBAL COMMUNICATIONS

sions. Some let workers check Satellite networking for telephone messages by Email over the corporate network, which cuts long-distance telegets almost practical

By Kim Girend

WITH AN INVESTMENT boost from Bill Gates and a big contract for The Boring Co., satellite communications is grabbing some attention from users Connects sites very

drawn to its high bandwidth far apart capabilities and international g Connects sites where Although it is doubtful that satellite communications will

ogy of choice, naysayers who have traditionally questioned the service's use within the corrate network are now taking a econd look. That's because an increasing

number of start-ups and veteran satellite companies are enticing customers with higher transmission rates, shorter signal delay times and the capacity to Satellite networking, page 52

frastructure is poor

Switching won't kill routers, but roles will change

By Bob Wallace

ARE ROUTERS HEADED for the

networking industry's endangered species list? Not according to users who claim there will always be a role

for the devices in their enterprise networks Stand-alone routers are widely used at the core of a corporate network to direct traffic between

LAN« But three develop are changing the role of the router: the emergence of Layer 3 switches, which build routing functions into switches; Cisco

Systems, Inc.'s alternative plan to team routers with switches; Microsoft Corp.'s efforts to

add routing soft ware to servers. "Hardwareroute eventually start to go away but routing funcnality will con tique to be a criti cal part of user Skip MacAskill. a senior analyst at Gartner Group. Inc. in Stamford. Conn. "It's just

started shipping Layer 3 switches, and the trickle is expected to turn into a river in the coming

Layer & switches promise to boost network performance by reducing or eliminating congestion in enterprise networks.

They also can be less expensive routers for breaking up band-width bottlenecks. But the

switches are still As Layer 3

switches become

said, high-end routers may find a home at the edge of net works, errying as gotoways to a work. Low-end

have long been used in this role will likely be shifted to rea

Cisco's scheme lets users keep their routers at the center of the

Cisco user James Ferry, M1S network manager at the Rio Suite Hotel & Casino in Las Vegas, said he likes the approach in which souters and switches work together to boost network performs

"I'm concerned that if you load all the functionality of a high-end router into a Layer 3 switch, you degrade the perfor-switching, core 52

Satellite networking

carry huge amounts of traffic - even over Asynchronous Transfer Mode. Satellite-based networking also lures multinational companies that operate in remote areas of the world where infrastructure is poor or connections are out-

Perhaps the most high profile satellite plan of late is from Teledesic Corp., a pri vate company founded by Gates, CEO of Microsoft Corp., and Craig McCaw, cellular telephone guru and former AT&T

Corp. wareless executive. Teledesic intends to build a so-called "Internet in the Sky" by funneling \$9 billion to Boeing to build 288 satellites to be launched beginning in 2001. But Teledesic has raised less than 10% of the required capital. Comsat Corp. in Be

Navsavers who have

the use of satellite

technology within the

corporate network are

communications

thesda, Md., also uses extelline to offer week speeds from T1 at 1.54M but/sec. to a speedy T1 at 45M bit/sec. - as does Orion Network Systems.

Inc. in Rockville, Md. Comsat's service uses VSAT and provides wice data and video Bob Egan, research

director at Gartner now taking a second look. Group, Inc. in Stam ford. Conn., said the quality of satellite com improved, but it can still be a risky proposition for network inanagers, who would

have little control over the technology that controls their network For the past four years, that hasn't proved a problem for Chris Coyle, director of information systems for Central

Europe at a large New York-based consumer product corporation. Coyle's company used Orion's service to connect nine sites in Eastern Europe to a network backbone using satellite communications, which he said was a much less expensive ontion than

leased lines

'From Prague to Warsaw was \$05.000 a traditionally questioned year for a 64K bit/sec digital line," Coyle said. Connecting sites in remote areas of Fastern

> Europe via satellite can cost 20% to 10% less than land links, ana-But the overall percentage of companies using satellite services

is small compared with land-based services. That's partly because of growing avail-bility of alternative network services in developing countries, said Phillip Redman, a senior analyst at The Yankee

Group, a Boston-based consultancy. "There's very little reason for a comp ny that has traditional access to use satellite." Redman said. C

You can't integrate messages

widely used products such as Lotus Development Corp.'s Notes and Microsoft Corn's Exchange

Bob Jaglowski, senior MIS manager at Harris Semiconductor Systems in Melbourne, Fla., said his road to unified messaging hasn't been smooth.

First, the company bad to replace its voice-mail system with a system from Octel Communications Corp. in Milpi-Then, his plan to deploy Octel's Uni-

fied Messenger alongside Exchange was delayed when Octel pushed back the delivery date of Unified Messenger from

onth to this rur Still, Jaglowski said the company is sticking with the unified messaging plan because it has the potential to make the

company more responsive to its custom-ers. Harris, with factories all over the world, must have employees who can nunicate by voice mail and E-mail 24 hours a day, Jaglowski said.

Switching won't kill routers

CONTINUED FROM PAGE SI mance of that switch," Ferry said, "But by just moving some (functionality) into the switch, you lessen any strain on the

MODE CROWTH

Analysts don't expect the rise of Laver v. switches to reduce router use. Dell'Oro Group in Portola Valley, Calif., projects that worldwide router shipments will grow steadily from \$57,200 in the fourth rter of last year to 652,800 by the

surth quarter of this year Some users who have already implemented switching are using routers as a

gateway to their WAN. "We're only using a router to handle Internet access today," said Pat Allen, a systems engineer at Monterey Bay Aquarium Research Institute, an oceanographic research firm in Moss Landing.

"In our network, the router does best being the device used to handle access control issues," Allen said.

"We don't expect to see a big change in the way we use our routers, although we are very interested in the ability to put router code in servers, as Microsoft is doing," said Andy Drummond, informa-tion systems manager at TechnoTrim in Livonia, Mich., a division of Johnson Controls, Inc. in Milwaukee, "That would simplify administration at smaller

One user believes Laver a switching is

"We've heard tons on this topic and really don't believe it'll bring on the demise of routers, although their role will change" to one where they work closely with switches, said a network manager at a major southeastern appliance firm, who requested anonymity D





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The Internet

Briefs Pull technology fights back

 Releases offer range of networkwide searches By Justin Hibbard

JUST WHEN PUSH technology is shoving its way onto corporate intranets, pull technology is

yanking its tail. A passel of new search engines (see chart, page 56) designed expressly for pulling information from intranets has some us-

ers reconsidering the pull model as a viable answer to information overload on inter-

Push technology cuts overload by automatically delivering only relevant information to users' desktops. Users configure push software to monitor data sources for new information that fits certain criteria

users enter new criteria every time they search, allowing them to tailor each query. But users must search manually each

EXPANDED FILTERS
Until recently, most search engines retrieved only Hypertext Markup Language files and text files. This limited their use on

corporate networks, which usually contain a multitude of file types. But new intranet search engines come with filters that recognize hundreds of file types, including documents cre-

ated with productivity suites from Microsoft Corp., Corel Corp. and Lotus Development Most of the new engines also offer gateways for searching var-Pull technology, page 56

business with them directly. They are more like advertise-ments, intended to get you jog

ging down to your favorite shoe

And like ads or television

cials, each site is sup-Sports shoe sites, page 58

WEBREVIEW► Sports shoe sites

Flash leads substance in Web site sprint

By Frank Hayes

WHAT'S IN A SHOE! On the World Wide Web, sites from running-shoë come

are a microcosm for the different approaches Web developers are taking to build brand image and customer

sites Computenworld has reviewed in the past such as those airlines,

and PC ven

ek'e Web site is packed with links to



► Interoperability. marketing faulted

By Mitch Wagner IT'S PARADOXICAL: Comp. nies are looking to the Internet more and more as a channel for business. But prepackaged World Wide Web servers that cm the core functi of business - buying and selling - have failed to find a

"Catalog servers" or "men chant servers," which allow mosnies to present an array

of products, take orders, process payments and manage shipping, have been around for more than two years. Although they have a loyal niche following, most users have given them the cold shoul-

suing sales on the Internet of

Airline lands Web database

By fustin Hibbard

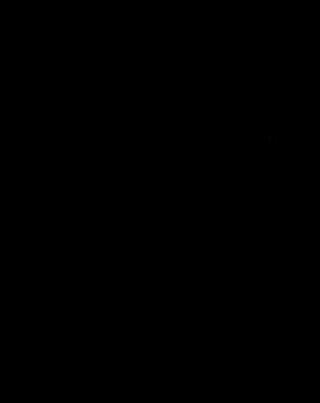
ALS NEW ZEALAND plans to fly ast competitors by getting ads in seconds about custom s halfway around the globe. What is the price of the realtime communication? An Inte

net connection and a \$395 desk top database.

base of customers and pros pects. The airline instruc surces to send leads to its data base administrator, M/S Data base Marketing in Los Angeles which enters the inform

But until recently, M/S Data base Marketing has sent the air-line a CD-ROM of new pros-





The Internet



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Briefs Pulltechnology fights back

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Search engines, by contrast, let users enter new criteria every time they search, allowing them to taslor each query. But users must search manually each

EXPANDED FILTERS Until recently, most search engines retrieved only Hypertext Markup Language files and text files. This limited their use on

corporate networks, which usually contain a multitude of file types. But new its search engines come with filters that recognize hundreds of file types, including documents created with productivity suites

from Microsoft Corp., Corel Corp. and Lotus Development offer entergys for searching var-Pull technology, page 56

WEBREVIEW► Sports shoe sites

Flash leads substance in Web site sprint

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On the World Wide Web, sites from running-shoe companies

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ping, have been around for ee than two years Although they have a loyal niche following, most users have given them the cold shoul der. Even users aggressively pur-

suing sales on the Internet often

Airline lands Web database

Ry Instin Hikkard

ALR NEW ZEALAND plans to fly nest competitors by petting leads in seconds about customers halfway around the globe. What is the price of the realtime communication? An Internet connection and a \$105 desk-

ton database. Like many companies. Air New Zealand uses an outside company to maintain its database of customers and pros-

But until recently. M/S Data base Marketing has sent the airline a CD-ROM of new pros Airline database, page 56

pects. The airline instructs its sources to send leads to its datahase administrator, M/S Data hase Marketing in Los Angeles which enters the information into a database

Pull technology

oue file systems, such as the

in Unix and Windows NT Internet Software division in operating systems. Microsoft Littleton, Mass. The search Exchange servers, Notes datapackage, due to ship in mid-fuly. bases, databases that comply indexes more than 200 file with Open Database Connectivtypes, including Microsoft Ofity and document manager Being able to retrieve Office

The engines can search scross multiple servers located anywhere on a network.

Users at Xerex Corn's Wilson will continue to use the Point-Center for Research and Tech-Cast Network push client from nology in Ithaca, N.Y. are evalu-PointCast, Inc. in Cupertino. Calif., to deliver news to users ating Alta Vista Search Intranet Extension 97 from Digital desktops even though Alta Vista's product can index the

"I think there will always be a role for both push and pull." Zack said. "The advantage we get from push technology is we can filter to get just information that is relevant without any active invocation of a tool on our part. But there will always be questions that I want an owers to that aren't going to be delivered based on some exter-

documents is a big time-saver, nal trigger." said Gregory Zack, manager at

> Such a trigger, found in prod ucis such as the IntelliSery serv er from Venty, Inc. in Sunny valle, Calif., can automate a search that a user performs But if users want to refine a

AVAILABLE SEARCH ENGINES

search, they have to reconfigure their preferences as if they were performing a new search on a search engine.

That's why users at Simon & Schuster, Inc., who rarely perform the same search twice. might not get much use from push technology, said Rob Berkey, senior vice president of information systems and technol-

ogy at the New York publisher. "We're big pull people here," Berkley said. "There are very few things that are routine that keep coming up again where I'd like to put an agent out there and have it keep monitoring There's so much stuff on our in tranet that people have to be able to go in and find it some-

Airline database

pects pulled from its database every two weeks. The lag time gave competitors a head start on reaching would be passengers.
"There are new leads coming in all the time from vario sources," said Kevin Burke, cyber services manager at M/S Database Marketing, "And [Air New Zenland] needs to understand what's happening with

now to make decisions. Database Marketing wanted to let Air New Zealand access data stored in Microsoft Corp.'s SOL Server and FoxPro databases through a nection. By using the Internet, the Auck land, New Zealand based airline could ges. And by us-WebFlier's HTML

their (marketing) program right

browsers, M/S Datacould avoid developing and dis tributing client applications. But building Web front ends for SQL Server and FoxPro

would have required hiring an SQL programmer, an expensive proposition for a departmental application. So instead, M/S base Marketing relected the \$395 WebFiler database from Alpha Software Corp. in Burlington, Mass.

sed on Alpha Software's Alpha desktop database. WebFiler is similar to Microsoft's Access or Lotus Development Corp.'s Approach desktop databases. But unlike those products, WebFiler comes with prebuilt Hypertext Markup Language (HTML) pages and Common Gateway Interface scripts that let users enter, extract and manipulate data through a Web browser without programming.

Equipment Corp.'s Alta Vista

the center's Design Research

But Zack said the institute

urke customized WebFiler HTML forms in a few days, using Microsoft's FrontPage. But users don't need to know promming to start using the

product out of the box, be said. "Why do I need Access on my desktop when with the Web interface I can completely design,

uplood and manipuoffer other people access to it when I'm not online?" asked lenv Michalski managing editor of

"Release 1.0" news letter in New York No other major desktop data-base vendor offers that capability, he said.

But many companies may have reservations about sending database traffic over the Inter net, and Clay Ryder, an abelys at Zona Research, Inc. in Redwood City, Calif. To address those concerns

WebFiler supports Secure Sock ets Layer encryption, which is also supported in browsers from Netscape Communications Corp. and Microsoft. Burke has combined the database authentication with authentication in Windows NT Server.

Commerce servers a tough sell rely on roll-your-own solutions. "I think we're just now getng into the first level of a take-

off period on this, where momentum is building. But historically, there have been me impediments to adop-"I think we're just now getting into the first level of a take-off

period on this, where momentum is

- Bob Chiebowski. **Wells Farge**

tion," said Bob Chlebowski, semor vice president of electronic commerce at Wells Fargo & Co. in San Francisco. "There are still some impediments." What are those impediments? Interviews with a half dozen us

ers failed to reveal a consensus. One user said the job of automating Internet sales is too simple and doesn't require special software. Another user said it is too complicated, and the systerms available have failed to addirect the took

Chlebowski said most prod ucts don't interoperate well with back-end order processing, inventory management, shipping and other business systems. But be said a recently an sounced product from Actra

Business Systems LLC in Moun. tann View, Calif., a joint venture of Netscape Communications Corp. and General Flectric Information Systems, Inc., may solve some of the buggest inter-

operability problems. But automated Internet sales Actra earlier this month an-nounced plans for a series of products designed for businessto-business transactions based on the Electronic Data Interchange standard, due to roll out

throughout the year. The Actra offerings are based on the from Netscape Price was the in-

sue for Percy Young. manager of store systems at Burlington Coat Factory Warehouse Corp. in Etna, N.H. Sales systems from firms such as

BroadVision, Inc. and Open Market, Inc. cost hundreds of thousands of dollars: from com panies such as Microsoft Corp and ICat Corp. are insufficien robust for big-business sales. "That's an awful lot to spend if you're not really sure if Internet commerce is a reliable business

option," Young said. Low-priced products available today from companies such as Microsoft Corp. and ICat Corp. are mostly for Windows by or Windows NT, which Young said aren't powerful enough for seri-

ous business applications. Like Wells Pargo, Burlington Coat Factory is looking to a new product as a solution. It plans to test Oracle Corn's Internet Commerce Server, due late this month. The server, former known as "Project Apollo," is an add-on to Oracle's relational database and was designed to facilitate business-to-business and business to consumer rates

runs have their adherents For instance, Fruit of the Loom, Inc. in Chicago has built a notional Internet-based network with its distributors, using technology from Connect, Inc. in mtain View, Calif., and Snickelways Interactive in New York D

HORT

Search by title Netword LLC has launched a ice designed to make uni form resource locators irrele-vant by allowing users to fine pages by a keyword. Use deventional a software mode that modifies their Work Wide Web browser to let then dress space. Site administra-ture can register their pages for a fee to Netword to enable the users to find their alter. The Arlington, Va., firm offers the service starting at \$5 per

Procurement were

Acer Interactive Sys Inc. in San Francisco las prement software ti rens over the internet. Walke Commerce Client was do signed to integrate with Tare aris, Walker's client/serve procurement package. Ti package includes catalog as

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Flash leads at sports shoe sites

ed about that company's shoes. But the ways those sites work their imbuilding magic run he gamut from con free gloss to cheerful sar-

Nike, Inc.'s Web site, at

wnike.com, looked and felt like Nike's TV com mercials. It was lush, beautiful and full of children's faces. But if you have been living on Mars and don't know that Nike makes running shoes, you would never figure it out

from this site. Instead of its products, Nike focuses on track events, or rather a single track event. When I looked at the site in mid-May, that event was the roard Penn Relays, a track meet held last month where kids as

young as 8 can compete. It was a beautiful account of the event, full of photos of smiling young people competing There was animation, sound clies from athletes and a few very low-key product pitches. If

On the other hand, if you want to find out about Nike, you are out of luck. Completely. I couldn't find a store location. company telephone number or



address, not even an electronicmail address. Information on running shoes? Forget it. Not many companies could get away with such a purely image-oriented, informationsusurechok.com, with a magafree Web site. Maybe not even

The Adidas AG site, at war laxcom, calls itself a Web zine. I looked at issue number you want to feel good about kids and athletics, this is the place to 11 - a close approximation of a print massizing, complete with a

isually striking cover, table of nts and an array of articles. The magazine format lets Adidas quietly include much of the information missing from Nike's site, including corporate

which data, a page for finding Adidas retailers and biographies of Adidas-spon sored athletes. Adidas plans to add a product catalog later this year, when I reviewed the site, only a few new products were

profiled The articles were what you would expect from a company magazine - no hard-hitting journalism here. But it was easy to spend time paging through the site.

One drawback: The site used Shockwave, Real-Audio and other propri-etary multimedia add-ons that not all users have or want to install

You wouldn't confuse Reebole International Ltd.'s site, at zine or TV commercial. It had

the familiar structure of a Web site, with links from the home page that take you directly to product information, corporate data and special features. In Reebok's case, those features included links to Fit-TV's site (the cable network is partly owned by Reebok), and an extensive selection of sports news on baseball, hockey and NBA and NCAA basketball teams, in-

cluding scores, schedules and

statistics. There was also a sec-

tion on Reebok's human rights

campaign — not-so-subtle die at arch rival Nilve hes

criti cized for its business peac-tices in thirdworld coun. And

the site had a line product catalog and a page for finding the nearest-Reebok retailer.

It was by no means an after-thought, but the Reebok site was so stuffed with other information that the product informs tion felt like only one piece of the action The downside was "Plan

Reebok" wouldn't work with older or oddball browsers. It absolutely required a lavaScriptenabled browser, such as Netscape Communications Corp.'s Navigator or Microsoft Corp.'s Internet Explorer, to get past the home page. And at least one home page link resulted in a File Not Found error.

NEW BALANCE

While the other shoe comp sites took a glossy, serious ap-proach, New Balance Athletic Shoe, Inc.'s site, at uwu newbalence.com, had a cartoony look and a wise-guy attitu That's a risky approach - what one customer sees as clever, another may find off-putting. But this site manages to pull it off. New Balance's "CyberPark"

New Balanca gives its sits a wise-quitude that sets it epart from the rest

included running tips. product catalog and a store find-er — all fairly conventional information, but well presented. A left side of the screen simplified navigation after I figured them

But what set the site apart was its attitude. The legal notices, for example, were labeled "legalese" and ended with "Have a nice day." On the home page, couch potatoes were invited to leave immediately. The site's designers wisely dropped the wise guy approach in the product sec tions; there, it was still friendly but all business.

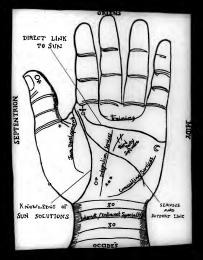
But the attitude returned in an online survey about the site (choices ranged from "Love it" to "Crummy. I won't be back.") and shoe-buying habits, includ ing the names of nine New Bal ance competitors. New Bal-ance's different look and feel made it stand out, a crucial ad tage when a site is peddl image more than anythi



THE TRACK TEST

PORMAT	TV commercial .	Magazine Wab site	Committeed Web site	Committee on
RETALLER FINDER	S. No E	76 To	Yes	, Yes
ONLINE CATALOG	No	Tes (new products)	les les	e. Yes
SERVICE PEATURES	Review of a single track most	Coloirity attitute and sporting event interestion	Health and filmess type, flumes rights compaler information, sports / scores	Printers and number tips
EASE OF HAVIGATION	Excellent	Pair	Good	Good .
MULTIMEDIA CONTENT	WAY sound, GUF and MPEG animation	Resiliatio sound, Oxick- time and OTVR animation, Shockwaye games	. Hate	Halo
ROWSEN REQUIREMENTS	Januaryt superied but not required	JoseScript supported but not required	JoveScript required	JaveScript suppo but not requir
STYLE GRADE/ CONTENT GRADE	A/F	A-/B-	B/A-	- B'∕B.

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-Infoworld, 4/28/97



If you're searching around fur the right database engine, a lot of legynrk has been dane for you already at www.oofware.ibm.com/th2press. But not by us. After evaluating the beta version, independent sources refer to IBM's DB2" Universal Database 5.0 as the new hig player on the competitive database

screie, he how well it handles both traditional and complex data. With comments like, "Beta tests find more majele, greet books a BMV resusped database," (PK Feek, 33/97), Mos on the above the is the Biote Report-son independent randy comparing DBZ for Windows NT* to Microsoft 'SQL Server' in scalability, performance and reliability, and a revealing Computerword customer satisfaction study of distributed DBMS vendors. Visit the site, Bond the latest nerw. And right now, while 50 in in beta, download a few trial copy of 100E for NT and form an opinion of your own.

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Royal Caribbean cruises for profit in sea of data



By Jaikumar Vijayan

AN OCEAN of archival data is helping Royal Caribbean Cruises Ltd. chart a profitable

Miami-based cruise line has been using a decision-support application that culls data gath ered over three years to help it make decisions on inventory management, ship deployment

With 11 luxury liners (and two more being built), 1.3 millio nned 675 voyages this year

Royal Caribbean is one of the intry's largest cruise lines. Last year, the company made \$150 million in profits on reve-nue of \$1.1 billion.

mue of \$1.5 bettoon.

Much of the company's ability
to maintain its profitability depends on how quickly it can
spot and analyze trends in fares,
capacity and demand, among

val Caribbaan uses a decision-support application to decide cruise fores and promotions other things, said Charles Eu-

> company.
> We know for a fact that evetematic data analysis can turn into several million dollars of

In the past, executives and ales analysts at the company

YEAR 2000

Securities group to chief execs: **Get involved**

By Thomas Hoffman

THE SECURITIES Industry Association is trying to smash through the biggest roadblock to ccessful year 2000 projects

SIA, a New York-based associ-ation for stock trading firms and investment banks, is mailing a year 2000 "scorecard" to more than 2,500 CEOs. The scorecards are a loose interpretation of securities firms' status, indents will be ready to b

Wal-Mart mines for forecasts

JUST WHAT OTHER retailers want to see: Wal-Mart arm with detailed forecasts of demand for individual products at each of the stores in its encard-Wal-Mart Stores, Inc. is tryi

to acquire that knowledge by probing the depths of its massive data warehouse with data mining software. The Bentonville, Ark., retail giant has ag the project again puts it out on the leading edge of companies that are looking to exploit deci-sion-support technology for

ME STORE AT A TIME

the pilot stage of a data mimi pplication that analyzes sales ne previously," said Rob Fu Mart. That should help the co

pany manage inventories "one store at a time, like [each one]

Wal-Mart, page 64

I Detailed analysis of seasonal impact on

I Less out-of-stock

Defense agency merges IT into 16 'megacenters'

By Sharon Machlis will be standardizing on one tool for

technology services to the nation's mili-

The \$43 million

BUY, BUY, BUY

of the military's business IT functions into 16 "meracen-

THE U.S. DEPENSE Inform tion Systems Agency (DISA)

automating opera-tions and schedul ing at its computer centers, which pro-

Cruise

CONTINUES FROM PAGE 63

ment is all about," said Warne Eckerson, an analyst at Patricia

Seybold Group in Boston. We are just seeing companies in all indus. tries build very

robust decisionsupport systems that give knowledge workers the ability to analyze core

data," Eckerson said. By comparing current data with past information, executives decided cruise fares, when and how to promote certain voy-ages and whether there was a need to redeploy ships in the

lot of demand for it |compared to previous years|, and we could raise the price. Or it could be the other way, and we would need to do something to stimulate de mand," said Bill Martin, manager of revenue management

But the time and effort taken

a lot more information a lot There literally would be a acker and in a lot more ways stack of reports about 10 inches than before," he said. []

high that analysts would have to wade through" before having enough information to analyze a situation, Martin said. Since October, Royal Caribbe

an has been using a new Revenue Decision Support System to speed up the analysis. A 100G-byte Oracle Corp. relational database management system handles the decisionsupport system and supports

analytical models, including a custom online analytical pro-

cessing application. The whole thing runs on a Sun Microsystems, Inc. Ultra 5000 server. The system feeds on histo cal data from multiple IBM AS/400 servers and looks for trends based on a comparison

of past and current data. It then generates forecasts, what if scenarios and graphical visualiza-tions for executives to act upon. By looking at just one screen of information, analysts can im-

two days crunching through a

year's worth of point-of-sale in-formation in Wal-Mart's data

warehouse and spits out buying

patterns and other results for

The findings are then used to fine-tune Wal-Mart's automated

product ordering and replenish-

ment system. When the application is fully implemented this

summer, the company should

be able to analyze up to 700 mil

Already, data mining has

lion store-item combinations

each of its 2.400 U.S. stores.

mediately figure out the revenue status of upcoming voyages and what action needs to be taken. "Red jon the screen) denotes a hot revenue opportunity, yellow a warm opportunity and blue a cold one." Marrin said. The new applications "give us

Trade group to CEOs: Get involved

Even if only a few companies aren't fully compliant by 2000, it could be catastrophic for other firms, users and observers said. And while most securipes in dustry CEOs and chief financial officers are aware of the year 2000 usue, the industry's response to it has so far been in

Experts say many software applications and hardware devices contain code with two-digit date fields that will either fail or be unable to recognize the year appn For the securities industry, that could mean stock trades that might not be settled or trading systems that full

Stock exchanges, broker/ rities indusdealers and clearinghouses are try or delivlike interdependent nodes on a er a crushnetwork. The network can survive a single point of failure, such as if a single brokerage goes belly-up.

But if multiple nodes fail, "it could have huge implications' on the entire industry because these companies are so reliant upon one another for financial data and transactions, said Mag. gie Parent, a principal on the year 2000 team at Morgan Stanley & Co. in New York

just \$90 million last year. The

technology also isn't cheap: Neo-

Vista's software can cost more

For most users, data mining

is something that's still around

the next bend," said Richard

Winter, a Boston-based consul-

tant who focuses on large data

bases. Many companies are still

wrestling just with the dirty

than \$750.000 when consulting

The problem. Parent said, is that nobody knows if date-sensi-Art Thomas, chairman of the data mining sales amounted to

ine blow. That's why SIA is CEOs and CFOs to sign off on the scorecard and question naires it is mailing out so th

will cause a

minor blip

in the secu-

senior management at componies that are behind the curve can get things in gear. 'Our objective is to try and help every organization with our industry to come throu this safe and sound," said

work of building a data ware house, he said.

Still, the concept has wide ap-For example, Sears, Roebuck

and Co. wants to use data mining to match its marketine to marriages and other events in customers' lives. That will let the Hoffman Estates, Ill., retailer move from shotgun market-ing to a more tailored approach.

SIA's year 2000 Oversight

Analysts place the cost of the year 2000 problem for the securities industry at \$4 billion. "and not a nickel of that soes to ward (company revenues)," said Thomas, a senior vice president at Merrill Lynch & Co. in New York. "That's why we have to drive this home with senior

> "Until the CEO gets involved, there's not enough high-level sponsor hip" for year 2000 efforts to succeed said Bruce Hall, a ermer Gartner oun. Inc. analyst who recently joined Southboro, Mass. based Trigent Software, Inc. as vice

president of marketing for the year 2000 project

one firms "have scores of people working on [the year 2000 problem] with a well-funded effort," Parent said. Others, however, are studying the problem and plan to "tee it up" as a budget item for 1998. Year 2000 gurus say that won't leave enough time or resources for stragglers to tackle the issues.

For its part, SIA has a strong track record. The industry coordinated a successful shift from five-day to three-day settlement of transactions in 1995 and a shift to same-day funds settle-

ments in February 1006. The securities industry has the disciplines in place to make the year 2000 project| successful," said Dennis Dirks, chief operating officer at The Deposi-tory Trust Co., a New York-based

a Sears official said. [] Defense agency merges IT into megacenters

turned up "very different (buying potterns from store to store and throughout the course of the year" on high-inventory contems, Inc. and Hewlett-Packard sumer stuples such as mouth Co. systems. wash and pet food, according to

ESTIMATED SAVINGS DISA estimated the software could save more than \$13 million over five years, partly by outting training and staffing requirements at the various

nating efforts, according to critics megacenters. The tool may also replace some code that uso't year 2000 compliant.

puter centers, but savings opportunities are being squan dered because different branch es of the military aren't coordi-

entel en

month. The GAO plans a future evaluation of the megacenter ef-

clearinghouse. C

Robert Sorgen, the GAO's head evaluator on that report. said he wouldn't oppose a currest investment in new schedul ing and management took because such a relatively small amount of money would likely

result in greater efficiency They're trying to opt

the mesacenters to make them more competitive," Sorgen

and ship capacity.
"The ability to handle core perations certainly is what this whole data warehouse move-

> DECISI SIGN-SUPPORT

"A voyage could have revenue opportunity because there is a

systems at Royal Caribbean. to get to the information was

Wal-Mart mines for data through reams of data in an effort to uncover hard-to-detect patterns and relationships. The

promise is that companies can use the findings to better align their marketing and business plans with customer demand. Wal-Mart expects to save iars" on inventory costs by get-ting a better handle on seasonal and week-to-week sales varia-

"We're trying to make nur that if someone wants to come in and buy toothpaste, it's there on the shelves," Fusitlo said. "And if they don't want to buy it at that time, we don't want to have more than we need because it costs us money to have that inventory."

tions, Fusillo said.

Wal-Mart is using data mining software developed by Neo-Vista Software, Inc. in Cupertino, Calif. Each week, business analysts at the retailer pick the products they want to examine. The NeoVista software spends

But data mining remains rela-tively untried, Only two other mitted customers are commotted to NeoVista, and International Data Corp. in Framingham. Mass., estimates that treat

CONTINUED FROM PAGE 63 and restarts. The centers run The Department of Defense IBM, Unisys Corp., Tandem is trying to consolidate, out-Computers, Inc., Sun Microsyssource and modernize its com

Although DISA is gearing up for more work from various mil itary agencies, most of the mili tary isn't planning to send such work to the megacement, according to a General Accounting



with the right protection, the century change isn't nearly so frightening.



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We knew we had some of the



IT'S AMAZING WHAT'
WE CAN DO TOGETHER.

Managing

lavo another headach rape's nese to a single curve ne't make life easier for S

Dilbert isn't the only one out there with a boss who doesn't get it. What do you do when you work for a boss who's . . .

TECHNICALLY CHALLENGED?

BY KATHLEEN MELYMUKA

wo eked for a woman who didn't know what a programmer or systems engineer was," an information systems manager at a Fortune 500 company says.

"She would make commitments to customers with no knowledge of how long it would take. She would say, 'I told the customer one week, so you'll have to do it.'" Sound familiar? How about this?

"My boss thought he was techie, but wasn't. He truly just didn't get it," a manager at an outsourcer says. "He would be the guy at meetings with customers, and his whole role was to build confidence that he had a strong group behind him. The trouble was, he made it sound like we were a band of idiots."

Dillert int the only one who has loos trouble, and often the trouble is that the loos is technically challenged. A recent survey of Fortune 1,000 chief information officers by Forester Research, inc. in Cambridge, Mass., revealed that 190% had nomechnical backgrounds. And that trend is accelerating, says David Foote, a program director at Meta Group, fice. in Stamford, Conn. "People are being replaced every day, and 19 out of 2 of those positions are being filled from the unitness side."

It isn't that there aren't enough techies to go

TECHNICALLY CHALLENGED?

around, says Madeline Weiss, president of Weiss Associates, Inc., a Bethesda, Md., consulting firm: "In many cases, those people are there because executives in the company decided IT is not doing something right. IT may be too slow, not

something right. If may be too slow, not responsive, too expensive, not adding value."

But regardless of why he's there, you've still got to deal with the technically chal-

lenged CIO. And nontechnical backgrounds are only part of the problem. Many technical CIOs are strong in one area — software, for example — but ignorant in others: Then there's the subset of bosses who

were technically astute 20 or 10 or even five years ago, but whose skills and styles have been left in the dust of advancing technology. Whether your boss is technically illiter-

Whether your boss is technically illinerate, semiliterate or old-skills literate, if he makes you feel like Dilbert, you have several options, depending on whether he's

"My boss educable or arrogant, confident or defensive, curious or clucless. "If the person

was techie, doesn't know and but wasn't. He truly just

didn't get it."

manager another says. "He was a business analyst. He knew he was illiberate in terms of the tech pueces, and he didn't up to make us believe he wasn't. He was able to manage people and customers, but he knew he needed somenow who under-

With that kind of boss, establishing trust is at least as important as working on his education. "If he trusts you," one manager asys, "he will let you do what you need to do regardless of whether he

"The boss knew he had technical limitations and looked to me at the tech team leader," says a manager who won the boss's trust. "If a guy gave a job estimate of two weeks, he'd say. 'Does this look good?"

A nontechnical boss may be defensive about his limitations, unwilling to trust and uninterested in education. Then you may need to manage around him: "I worked [for] a director who came from an accounting background," says former IS manager William H. Whitmey, now owner of Micro Business Applications in James of Micro Business Applications in James and Micro Business Applications in James Applications

ison, Pa. "Being a 'bean counter.' he was often meer interested in the costs of running the department than making sure the appropriate tools were available to do a good job. The final insult was when [he] questioned the secretary as to why she was ordering so many peocids."

the solution to the pencil czar was to i. ignore him and prepare supply orders within the signing authority of a lower, but sance manager.

Another nontrusting boss would never let the manager go "outside the box" to try anything new or creative. The manager decided to work half the day on what he was ordered to do and the other half on what he wanted to do, because the boss wasn't savry enough to know the difference.

OET SPONSORSHIP If you can't gain the boss's trust and you can't manage around him, your best bet

is to find a powerful sponsor.
"I worked under a CIO who was partially competent," a former IS manager says. "This gay was a hardware gay He knew all the latest and greatest mainframe and network stuff, but he knew nothing about orfware.

"I was hired by the CFO to be director of applications," she says. "He told the CIO to leave me alone and let me do what I needed to do." That's exactly what happened. She re-

knows that he ported to the chief financial office, the desert's know and CIO eventually moved to a different detired in willing to learn, If you're lacky enough to avoid the cate ham, "aye a technically cheeten or semichoeless boss, former IS manage you may face another challenge: the care who's been ever technologist reared in the classical

there. "I had a bose who dashes with the "Old of Fox and Fox at II." another says. "He mainframe erab boises | don't start Fox as the both trusters who do morthing, they make a business was albustera in same facility to a republy that you can have one same facility in same for the project plan to do

to make us believe he wasn't. He was able to manage people and customers, but he that simple. They say to manage people and customers, but he that simple. They think you knew he needed someone who underhave to go through all these different stood the tech part, and he wanted to checks."

The best strategy in that situation, an old-school CIO says, is to persuade the boss to loosen up and try britisade the boss to loosen up and try things the PC way on a small, noncritical application, if your methodology works, keep proving it with increasingly important projects until you win him over.

Finally, for technocilly challenged

CIOs who find themselves rattling the Dilberts in their departments, there's a fairly casy way out: "The model is very simple." Foote says. "The business oriented CIO immediately hire a chief technical officet. You've got to put someone in there who innoses what's happening — whan's being accomplished and what incit. They make very good partners to run the everyday technology prices." If

Melymaka is a freelance writer in Duxbury

HELPING THEM GET IT

People who have worked with technically challenged bosses have come up with specific educational strategies that help. A few follow:

I Empathins, azyr Macmi Karten, former IS manager and president of Karten Associates, a consulting firm in Randolph, Mass. Think of here you fast when you take your car in which a myserious agriculting noise. You're in over your basel. You don't understand the systems, the complexity or the diagnosis. You have no basis for evaluating snything. That here you're best deal every day.

I Recognize that ago is involved. Help him save face. Don't humiliste him for what he doesn't know.

I Don't talk techie. He either won't got it or will try to pretend he does.

I Palk business, says Ries Dalmonico, (10 at Scott Sports Group/Schwinn Bicycling and Pinness in Boolder, Colo. If he desert's understand the impact of computers being down, but show the implications in last revenue and concomplaints that will read the implications in last revenue and concomplaints that will read the implications of go out. If you went new development to tool, task shout business in predictions, delire and then assings, the concept of the control of the control of the control of the control of the swingtown to be a single of the control of the contr

I Communicate in his preferred style, Karten says. If he likes things in uniting, for example, write.

I Take him to seminars, conferences and also visits to organizations that use IS creative ways, says Markeline Weles, precident of Weles Associates. Then spens time exploring what you heard said how it might apply to your organization.

I Arrange staff presentations for the best and make some the staff is talking in its Yerms. You'll be oducating the book, training your staff to talk with business clients and helping them know and trust each other.

I Show him. If the boss constantly underestimates project timetables, involhim in the analysis and technical design phases to make him understand.

I Birdig in the experts, says Droughas Machie, vice president of magazinese options of Zarich Interactics Co. In Schoemburg, If, This his to meagazinese costillant assistance, and back up your arguments with articles and consulting reports. It halps for him to know it sen't just your opinions. Helds him leave Come him which the Delination of Machine Interaction.

I Help him learn from his mistakes, Delimonice says. When there's a ya-hear power outage and no backup, h'a a good opportunity to ramind him why disaste recovery is a good idea.

If Help him communicate with his bosses, Karten says. Give him what he needs to succeed with his superiors.

I Establish brust. Radiat the temptation to put one over on him. Build up his confidence that you knew what you've doing — that if you say so, it's a fact.
— Kuthleen Malymoits



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Your **OTHER** Millenni **Problem**

FIRST TIME, THEN MONEY: Europe's move to a common cufrency will add new strains to IS departments coping with the year 2000

By the staff of Computerworld, Computerwoche (Germany) and the IDG News Service

HE LAST THING IS executives need is another big conversion project. But it's looming, right on the heels of the year 2000 problem: the arrival of the European Union's new currency, the Euro. Already, information systems nagers in the European Union (EU) are preparing for European

Monetary Union (EMU) and the Euro, which is expected to gradually replace the national currencies of EU mem-

bers between 1999 and 2002. Banks will feel the impact first: In 1999 they will have the option of conducting electronic funds transfers in Euros.
For other businesses, the crunch comes in

2002, when the Euro begins circulating and national currencies are phased out.

For now, many U.S. firms doing busines in Europe are putting the Euro on the back

"I think the year 2000 is still the highest [priority],"

says Laura Nance, vice president and year 2000 project executive at Equifax, Inc., an Atlanta business information services firm. "People keep hoping (the Euro) will be delayed." Others question whether the adoption of the Euro will stick to its timetable or whether all EU countries will adopt the currency. "[The Euro] is certainly on our radar screen, but we haven't put a lot of resources into it." says Karl Moore.

chief information officer at International Paper Co. in Memphis. "We're kind of waiting to see if [the Euro] is going to become a reality."

But European banks are planning for the Euro's im-pact on information technology. The initial goal for bankers is "multicurrency capabil-

THE EURO TIMETABLE

ity" - adjusting applications so they can handle multiple currencies. The Federal Association of German Banks says automated teller machines, statement printers and system connections to customers and other

banks will be affected By 2002, retailers will need point-of-sale systems and cash registers capable of handling two currencies as well as the century change. Companies will have to adjust their finance, accounting, payment and billing systems. All told, converting to the Euro should cost about \$100 billion worldwide, according to Bruce Hall, former

research director at Gartner Group, Inc. in Stamford, Conn. That compares with \$100 billion to \$600 billion worldwide for the year 2000 problem. Like the year 2000, the Euro will force IS

organizations and their vendors to make changes to their software. They will need to identify systems that contain monetary values and currency identifiers, replace or patch those systems with Euro-compliant code or third-party software

and test the results. They will also have to cope with old. undocumented systems, analyze databases and apolica tions and scrutinize systems that connect to computers at other companies. The lack of management resources and program ming resources" is the biggest challenge for IS depart-ments, says David Talbot, director of software technol-

ogy at the European Commission's industry directorate in Brussels, which coordinates EU industrial policy. There is no silver bullet. It is unrealistic to expect fully automated solutions to the Euro."

IT leaders likely will debate whether to outsource or replace in-house systems, rather than make them Eurocompatible. Still, the Euro's legal uncertainties are car ing difficulties. "It doesn't make sense to begin specific data processing work without a detailed legal framewo for the method and time of the conversion," says Friedrich-Wilhelm Kuchenberg, divisional manager of planning and control of data processing at the Cologne ased department store chain Kaufhof Warenhaus AG So far, national governments haven't spelled out when businesses will be required to implement specific changes in accounting procedures. That kind of legal uncertainty makes it difficult for 15 managers to plan

Euro projects. PREPARE HOW

What, then, should American IT leaders do to prepare for the Euro? Following are some suggestions:

Stay informed on the Euro timetable. A good way to do that: Ask European staff to report on the Euro'a progress, read European business publications such as the Financial Times of London or search the World Wide Web for "European Monetary Union."

4 Most, but not all, consultants advise co try to fix both problems at the same time. "It's a nice iden, but the complexity of it prohibits this from being double," says Wolfgang Schwab, customer care research manager at Meta Group, Inc. in Munich.

I Look out for reusable processes. Test enviro and change processes from a year 2000 project might be reusable when you convert to the Euro, according to Brian Wegenroth, a vice president at Booz Allen & Hamilton, Inc. in New York.

8 Stay in touch with your European suppliers and customers - not just on the Euro, but on the year 2000 issue also (7)

Written by Allan E. Alter and reported by Robert L. Scheier, along with Torsten Busse, Kristi Essick and Joanne Toaffe as

the IDG News Service and Heinrich Vaste and Ludeer Schmitz at Computerwoche (Germany).



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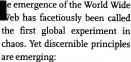
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possible technology, to long you the same





HOW 'PUSH' YOUR PITCH TO **CONSUMERS?**



Individuals, increasingly pressed for time, are beginning to find the net a convenient way to do research and compare

So far, online comparison shopp have had to spend time beowsing for information. But soon, "push" technology will speed the process immeasurably. People will select the kind of information they want to receive automatically from a universe of data. It's the start of what will be a truly consumer-centric world. But although push technology will

benefit consumers, the Internet - and its successors - also will create chaos for spanies that no longer understand what business they're really in. With time of the essence, three Inter

net business models will eventually arise. The first will be content and product providers. Those will be manufacturers or companies, such as newspaper publishers, that produce information. Those companies have always been around. But now they'll be challenged with how to reach consumers electronically. Will they send information directly to the consumer, or will it be through an inter-

The second business model will be consolidators — the electronic form of intermediaries. Travel agents are early examples of consolidators. They take information and services from airlines, hotel stors and car rental companies and nackage them in ways consumers want them. Watch how large travel agents such as American Express and Re bluth, enabled by the power of the Inter net, battle with the airlines for control of But the internet also will provide for

new types of consolidators. Think of all the items individuals buy without adequate information simply because they don't have enough time. There's a real opportunity for a sort of online Consumer Reports, continuously updated by individuals' product reviews and tes-

The list of rated items could include cars, financial products, homes, appliances and electronic devices such as VCRs and PCs

Think of providing a service by which an individual could push a "send" button

and have the Web instantaneously produce information on the best price, prod-uct location, delivery schedule and warranty provider. Peapod, an online grocery shopp

service, is another example of a consolidator. It not only provides order-entry and delivery services, but also lets you select produce and grocery goods on the basis of price, calories or even fat content. Another off-cited version (though not yet profitable) is Amazon. com, where editorial content and reviews

create demand for book sales that are slickly fulfilled The third horizons model will be infin

structure providers. Those will include network operators, software companies, banks and credit-card processors. The latter two will handle the cash in cybermost formidable of the infrastructure providers, but its ambition won't allow it to be out in any single box. In addition to providing technology, it wants to own content - and the consumer!

In fact, in all the chaos, there will be ome interesting jousting as companies seek to shape themselves into one or more of these models. Following are some questions that might help you posi-

olf you're a content provider - say a consumer products company such as RJR Nabisco or Philip Morris/Kraft Foods - do you have to own a consolidator, or can you maintain your market position in cyberspace? Or, if you continue just to manufacture products, how will you manage logistics to support the in-stant delivery the new consolidators will #If you're a consolidator such as a travel

agency, how will you provide consumer periences that are unique and not just a boring online catalog? Consumers are concerned with time, efficiency and price - and they want to enjoy their shooping

#If you provide infrastructure, how will you create alliances with consolidators and content providers that will return solid profits to you and your partners? Alusces have always been problema mainly because everyone wants to "own" the consumer. In the new world of electronic commerce, the consumer won't be

Those are all questions that shou eep you up at night. But a good start will be to decide which business you should "push" yourself into. Cl

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is finsChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.



OURCES: IS MANAGER'S BOOKSHELF

A se "virtual communities" the ultimate way to make money on the World Wide Web? Nobody's done it yet, but the authors, two McKinsey & Co. analysts, make a convincing case that such commu naties can be wildly profitable and that you shouldn't get left behind in saiding them

Their virtual communities are groups that share common interests and needs online, whether they are poli enthusiasts or cancer sufferers. The authors aroue that the prime value of such communities is the experiences. insights, fellowship and product recommendations that users contribute. As more users log on, the community acquires a critical mass of purchasing power and prod-

That is where "the laws of increasing returns" kick in and provide the profit engine, the authors claim. The Arthur G. Armstrong more people who contribute to the site, the more valuable it becomes as a place to advertise or sell goods. The Press, Boston: \$24.95; 256 more vendors advertise or sell in the community, the pages (hardcover) more enthusiasts will contribute content, and the cycle

starts again. The owner makes money through advertising and (or commissions on sales made over the site. The authors estimate that a virtual community created with an initial investe eest of about \$15 million could grow to a \$700 million business within 10 years.

They acknowledge some stumbling blocks, such as whether yes done will find it profitable to sell amid the "auctionlike" atmosphere of online price wars. I'm more wor ried about issues they barely mention, such as the cost

of managing, filtering and indexing the ever-growing data needed to make the sites attractive. Those costs, as well as a lack of robust management, security and transaction-processing software, could turn early com-Despite such misgivings, this is the most well-

thought-out analysis I've seen of how to actually m ney on the Web. The authors are right in arguing that it's all about content, interaction and commun Now, someone just has to do it.

By John Hagel III and Canand Stationer School

- Robert L. Scheier

computerworld tranete

APPLICATION BUILDING

Code Conspirators

By Natalie Engle

For programmers, collaboration has always been a necessary evil, and cultural biases persist. But leading-edge organizations are finding that shared design elements, knowledge bases and extended development teams made possible by the intranst really work.

eneral Motors Com.'s Control Center engineers span the globe. They develop software in C, nbly and a GM proprietary language at sites in Michigan, Australia, France, Germany and Sweden for the "little black boxes" (sensors and indicators) that control automobile engines and transmissions. They support companies in Korea, Japan and China and distribute the software to controller manufacturing locations in the U.S., Germany and Mexico.

"We have development activities going on worldwide,

24 hours a day, with different holidays and vacations," says

Dave Poiriet, manager of controls process support, "but we're working as a virtual team."

What's the vehicle for that teamwork? The intranet.

Developers' need to share knowledge is nothing new.

bug fix or working with out-of-date versions of objects, simply because

nobody knows what his co-worken have done. Without a process for tracking changes and rosisons, all large projects get out of control. But these familiar problems are about to meet a radical solution. At present, most devel-

opers rely on paperbased documents, decroneis, ings to make, voice mail and meetings to make code and status information. Or they require a dedicated pipe. "The Web," says Dan Kara, chief technology officer ar Naciok, Mass.-based Soft-

ware Productivity Group, "opens all that up."
It's still early. Tools are just now becoming intranecuabled. And intranest remain decentralized grastroots:
efforcs. Still, groups of developers in the far-flung corners of suconsiders, pharmaccustcal firms, insurance compo-

When they don't, dozens of people end up writing the same nies and banks are beginning to see the potential for using
INSIDE • SAPIENT'S KNOWLEGGE SYSTEM, PAGE 4 • MCI'S INTRANET REPOSITORY, PAGE 10 • INSIDE

APPLICATION BUILDING

Continued from page 1 their intranets as backbones for distributed collaboration

GM's Powertrain Control Center uses its intranet to coordinate the work of more than 300 engineers all over the world. Now, instead of completing dozens of disjointed efforts, everyone works with consistent standards, procedures, documentation and code.

Executives at a large Midwestern SONLINE insurance company receive

constant updates on a new application's status - without nagging the project manager. And developers at Sapient Cotp., a Cambridge, Mass,-based consulting firm, share source

code, prototypes and lessons learned (see related story, page 4. Sapient's project teams and technoloey experts create internal Web sites with

information about their projects or area of expertise. Each project home page offers an overview of the project, its business purpose, the time line, group documentation, data model disprams, business rules, design delivery, a prococype (including screens with business rules, documentation and flows all tied together), team particulars and lists of tools. vendors and vendor contacts. Develeven document "lessons learned."

When they're finished, they package the Web pages as a CD-ROM, which serves as documentation for support. Each technology home page, or knowledge center," contains everything from links to vendoes' Web pages to scripts. The benefits: no more "reinventing the wheel," fewer interruptions and development intelligence that no longer lives (and leaves) with the individual programmer.

CH-CH-CH-CHANGES

But if intraners are the solution, they are also part of the problem. Interpet/intranet

applications represent "one of the biggest change management conundrums," says Brendan Conway, research director at

Gartner Group, Inc.'s applications development group. The intranet allows employees to deliver more versions and more code than ever before. People update Web sites many times a day, with each change following a complex series of approvals. Each site includes file types that range from HTML to GIF to CGI to lava. And each development team con-

tains everyone from programmers to Webmasters to marketers. Project managers don't realize it yet, but their jobs just got harder.

It's a case of too much of a good things. Remember the early days of designop pub lishing, when people used 27 fonts for a single brochure simply because they could? With Web development, too, "people will get into trouble," says Sandy Taylor, a market analyst at the Software Productivity Group. "It's so easy to set

up and change Web pages that it becomes a problem for people trying to control the quality."



Through 1998, Gartner Group estimates that more than bulf of external Web site implementations will experience annual application maintenance costs that are two so three times greater than budget due to inefficient con change management practices. But "most

people," Conway says, "don't even know they have a problem yet." We're in the throes of first-generation ternet/intranet development — uncoordinated efforts that spring up outside

today's intranet "developers" are really users who have never heard of change management (CM), a comprehensive approach to tracking changes to an application's software components and their inverrelationships over time.

Soon it will be up to IS to educate them. As organizations enter the second reneration of intranet development, "IT infrastructure eroupi will jump in and start implementing real world applications," says David Heigh, vice president of product marketing at Sybase, Inc. Those who don't find a way to track tasks. objects, revisions and approvals could find themselves the victims of massive всоре стегр.

Vendors see this scenario coming, "All of the CM tool vendoes are talking about Web-enabling their products," Gartner's Conway says. This news is both good and bad

"The number of new technologies is aind-boggling," says Mark Morrissey, program manager at Continuus Software Corp., which makes a configuraagement system. "Every client/ server tool has a Web-related product or vehicle." It takes a psychic to figure out which applications to build with which tool, be says.

What's more, the technology is in its infancy. It's plagued with product imma-turity and a dearth of standards, Hsieh says. Vendoes are "rushing stuff to market," so users may find products with wacky configuration requirements or special plug-ins or discover that the Web version of their favorite CM tool is miss ine the very feature that made them fall in love with the non-Web version. But, Hsieh predicts, these problems should be short-lived.

O NUISANCE REQUESTS Interruptions are the curse of the project manager. Five developers want to know whether they have the latest version of a specification. Four others have beard about a new software release. Three want to know if it's no the information systems group. Most of . schedule. One wants it "now."



Sapient solves this problem with "knowledge centers" — internal Web pages set up by technology experts to share information about everything from C++ to CORBA to databases. For each one; the "expert" creates links to the Internet or downloads files that describe standards, best practices, software classes, version control and more. Angelo DiSanto created and main-

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number and location Before the knowledge centers,

DiSanto says, he received about 400 E-mail messages a day, many of them general and repeat questions. Now when someone has a question about a database, a pri command or a development tool, he just looks it up. It saves hours of waiting and makes better use of DiSanto's and the other experts' time.

According to a companywide surbase and what object is being affect- vey, the intranet saves employees an ed"; register for a class; visit data- average of 20 minutes a day, gener-

ating a 1,000% return on investment. The intraner also enables new employees to get up to speed quickly, which is critical for a company that doubled in size, from 250 to 500 employees.

last year. Sapient is not the only company to out down on message send-ing and paper shuffling. At

GM's Powertrain Control Center, "the Web gives us a single information source," says Robert Haar, staff project engineer responsible for the group's developers Web site. "It is automatically.consistent

and always up to date," be says. So staffers can all be sure they're work ing on the same version of every p of software and following the latest Continued on page 6

APPLICATION BUILDING

Continued from page 1 their inerances as backbones for distrib-

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Configuration Management Features

Configuration management can reduce bureaucrecy, improve developer efficiency and clus everyone in on project status. Use the following features to help you evaluate commercially available tools: Version control: Maintains a history of changes to a component as it evolves over time and allows

access to a perticular version, not just the last version created.

Workspace management: Manages inde spaces for developers so each can work in isolation of other changes and give visibly complete work to collargues as needed. Parallel development: The ability for several developers to

make changes to the same component at the same time and merge those changes, resolving any conflicts in the process. Remote development: Supports development of soft across geographically distributed sites or compenies. Supports the

periodic synchronization of databases between sites Configuration management: Configurations are software nts associated for a single purpose. CM tools track the

dependencies of each component on any others, including, where

possible, dependencies on nonsoftware items such as design documents or test specs. Change management: Addresses problem tracking and change control and the pro-

analysis of management information derived from these sources. Can users log change requests and lam reports and monitor their progress through the system to closure? Build and release support: Reduces build times dramatically by reusing partially built items from

provious builds. Release support allows developers to track which users have which versions of which ponents and to therefore be sure which of those will be affected by a perticular change Process management; Allows developers to ensure that components progress through ch cycla phases before being released. Helps ensure that testing and quality assurance occur before release.

Sapient solves this problem with - base vendors' home pagest or read knowledge centers" - internal Web pages set up by technology experts to share information about everything from C++ to CORBA to databases. for each one, the "expert" creates links

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responsible for the group's

APPLICATION BUILDING

Sapient Centralizes Knowledge Centers

Manu-based consulting firm that designs, develops and implements information systems for such clients as Merrill Lynch, Public Service Electric & Gas of New Jersey, Pseific Bell Internet Services, Well Fargo and Digital Equipment Corp.

Septent is expanding its Intranet, celled "Source," to

deplant is expending its Intranet, colled "Source," to ter developers where information and code (right). Bight meetins age, technology experts (selled the "SWAIT team") began eventing "Invarishage centers" internal Web pages devoted to their area of expension. Project teams began creating home pages and sharing information on their projects with the rest of the company. Soon they expended these home pages to share

and truck learned, bearned.

Exemplifying Combine: Expirits in everything from Cuto CORBA to destablese maintain internal Web sites
devoted to their area of despaties. Each includes and devoted to their area of despaties. Each includes and devoted to their area of despaties. Each includes and devoted to their area of their area of their area of their devoted and more time middle surrementor. Each project, its arm manplese themse pages: For each project, its arm manthous creates are of Web pages to always for their properties.

Project home pages: For each project, team members create a set of Web pages to shew information to assist application development. Other employees use the home pages to they soprised of the many project application of members and seam from other teams' appelences. ROL (100%) (see bottom severathost. The project of the

Gotting developers to step coding and document.

Source works well because 1) Sepient

Source worns well because 17 separer is efficiency-driven. 27 The company outburn when the separer outburn the separer than the separer than the separer outburn the separer outburn

5) Sapient provides employees with extensive training.
For an intranet such as Septent's to work, there has to be a celture in which trust is not taken for granted but rewarded, says Richard Hunter, research director at Gartner Group's applications development and man-

agement service. Whether you use an intranet or groupware, knowledge management cerries a "substantial human overhead," he says. On an enterprise level for a global con-

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suling film, for example, that may be 5% to 15% of three people committed to Source and more than 80 three people committed to Source and more than 80 content owners. Even for those who practice Involve adja management on a smaller souls, historie rapgents spending 1% to 4% of overall parament in course if you want to see maults. "If your straingly is aimed at outling costs," he adds, "longs it."

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APPLICATION BUILDING

Continued how page 3 naming concention

The GM fearmachieved this outh-Line-based Nessays I mappers Sere, linked six Web metabace and developed and supported by Flectronic Data Systems Corp. and another server running Continuous Developers (sheek) in a processor or requirements document to the Con-

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ument with their Neveaps Communications. Corp. Neveaps. 2-02 browsers The developers have supplemented this with an B-mail nonfication system that automaticalls sends users a message over time a document, that conserns them

changes. There use a second interarer to deploy executable files — the code that runs the "black hoses." Customers, including manufacturing companies, the GM series organization auto dealers and assemble plants, use the software to program the Powertain and transmission con-

trollers.

The Web server consists of a dedscated IBM 704 dual processor server with RAID draws running. Microsoft Corp's Windows N1 ±.0 connected to a Microsoft SQI Server dualstase. They developed the inter-

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ns/Web solutions are "more comprehensive;" they say.

The intranet doesn't solve all their

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problems, however They still wrestle with incompatibility issues, such as reconsting the different Unix and Windows file formats and tools. Nor does the intranet help them balance the need for security with the need

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GM developers are luckier than developers in many other organizations.

GM has been cuering the software for a controllers since only 1993, so they "had a green field to start with," accord-



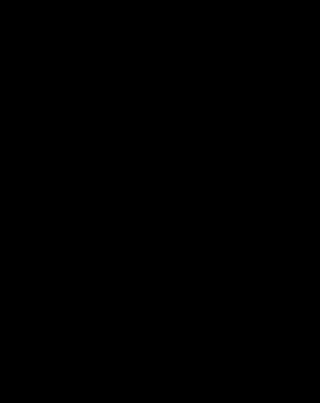
ing to Pointer. They didn't have to reengineer systems, processes and cultural issues that go back decades.

MANAGE LATER

A large Midwestern insurance company that disht is star from scratch may represent a more typical example. Developers there face republic designations and need toxical obtainous. The insurance takes to the code and sleen with consultants as The Platter Group, Inc. a. Change-based internet france contains as The Platter Group, Inc. a. Change-based internet france contains a construction of the conmation system. It also below segment development and word "fack-cial rich check-out" insures says james Cocaia, The Platter Group's president.

The insurer uses a Domino server to chedule all projects and track budgets. work plans and updates. It created a beowser front end to its corporate data with a Java-based application server from NetDynamics, Inc. in Menlo Park, Calif. It does all of its "intelligent" programmine on a self-contained NT workers. tion. When an application update is ready, staffers copy it to production and post it to a home page. People know it's been updated via an "alert mechanism" based on the concept of the rotating banner ad on many Web sites. When a busition there's you conside in beach and the bunner alerts the user upon looin

Thanks to the intraner, business users are better able to contribute to the requirements and postoryping stages of Continued on page 9



APPLICATION BUILDING

Continued from page 3 naming convention.

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So colleagues, whether in Michigan or Munich, can access this document with their Netscape Communications Corp. Netscape 2.02 beowsers. The developers have supplemented this with an E-mail noti-

plemented this with an E-mail notification system that automatically sends users a message every time a document that concerns them changes.

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face using HTTP Version 3.0, to provide bidirectional file transfer functionality.

The payoff: All the constituent

organizations receive the software through a single interface, to no matter where they are or what us.

or Prior to the intranet Web servers, GM engineers filed

papet documents and distributed them via the internal mail system. In 1994, they installed a Unixbased shared file server, but it lacked data organization, control and file

naming standards. The Continuus/Web solutions are "more comprehensive," they say.

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The intranet doesn't solve all their p

problems, however. They still wrestle with incompatibility issues, such as reconciling the different Unix and Windows file formats and tools. Nor does the intranet help them balance the need for security with the need for usability.

The group hant calculated a return on investment, GMV Hara stys. Nor has it reached its ultimate objective moving its "enrie" notware development process (source code management, one models, insulation models, requirement documentation, program management) to a single desibase and communicating all that information through Web serves. But the group has no communication are insurant functions and the serves of the communication of the communicatio

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Thinks to the intranet, business users are better able to contribute to the requirements and prototyping stages of Continued on page 9

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the code at the source level, too. Mac OS So you'll be whipping out those

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APPLICATION BUILDING

Continued from page 6 development, Cicenia says. Protorypes can be mocked up quickly in HTML and requirements analyzed against screen and workflow.

The intrangt also enables the developers to share add-on classes, so they don't have to reinvent objects for every application. They've developed their own login, secutity and user interface classes. And they're standardizing on NetDynamics and Net Charts from

Net Factory, a Laurel, Md., software company. This gives them a i

basé class of sophisticated charts and an applet that

charts automatically, so they can create static charts that are research director at Gartner Group's

updated daily The developers compile data from various sources and publish it as reusable tablets and charts in HTML Examples include a chart for accounts receivable that remain open for 90 days, another for cash that hasn't been applied to a particular insurance policy or another that tracks errors that turn up

in insurance policies. This use of the intranet may be a snapshot of the future of software development, says James Martisi, president of lames Martin & Co. and one of the founding fathers of CASE. He sees a brave new reusable world in which most software is built by components and most components are accessed over the Internet and instance

Of course, "most of this is futuristic." says Carma McClure, vice president of research for Extended Intelligence, Inc., a Chicago-based software technology company specializing in andrew and services that support software reuse. "De facto standards haven't settled down." The wars between ActiveX and Java applets, and Microsoft vs. the Object Management Engler is a freelance writer in Group, rage on. And "a lot of peo- Cambridge, Mass.

ple are now just developing their strategies with respect to the languages and technologies," McClure says To be sure, the intranet makes a great

backbone for collaboration. Especially when the alternative is paper-based documents and phone calls. With intranets, people can develop software faster, share knowledge better and manage change. And many of the tools are sitting out there on the Web. ready

for downloading. But in the long run, analysts say, the bissest burners are cultural, "An"

> may be oriented toward competitive advantage." says Richard

applications development and management service. "but the culture may be as antagonistic to sharing as you can get." And within the corporate culture, there's a developer subculture. "Developers are like artists," says John Senk, a project manager at Sapient. "They love to code." Asking them to stop their creative lava programming to door what they've done oo the Web is like

telling Picasso to "take out the trash. Most developers work alone or in small islands, adds Clay Reder, a research analyst at Redwood City, Calif.-based Zona Research. "When you start to make the intranet the focal point of [their] activities, you are bringing a strategy to application development. I'm not sure most

companies are up to that yet." But grassroots tactical solutions are springing up among small groups of developers. And often that's how a strategy hegins, especially when it comes to intranets. At GM, "a lot of the other access on warding or classly," Pointer says. "And in a lot of cases, they are following suit."

Tips for developing via the intranet a culture in which trust and sharing are actively rewarded.

We are spending a lot of money to meet face-to-face with Continues monthly," GM's Dave Pointer save. "We think it's worth it."

document repository and supnt it with automatic E-mail notfication whosever documents change.

tive. Get involved with users who are creating Web sites. Educate them on testing, quality assurance and

w and the old for the new. s proven technology under your eas that was can easily to your new

PROJECT: MCI

MCI Puts Object Repository Online

By Sharon Gaudin

he developers at MCI Communications Corp. ing. In fact, several artempts to get them to share and tense com penents in new applications died of neglect. But that seems to be change ing ever since Mike Kreiner, manag er of MCIs Object Technology Group, built a component repository on the company intranct Today, the repositors has blossomed

S ONLINE with 10 times the antount when it first went online Ire October: And not only are developers sharing information, but Kremer who is using it for what as opers from around the country who may be working on similar projects "We says a lot of time and money mst by putting people in touch with

one another. Kremer says. And I think people ted better knowing they're not the only one, on this development sournes

WHAT THEY'RE DOING

The object repositors of components, widoers and

MOUS MIKE KREMER CAN now monitor what projects offices are work ing on and 'save a lot of time and money just by patting people in touch with

opers in inagers and support and test staffers is open to the range of lanmares Developers, testers and managers can take a chunk of code out of the repositors and drop it into the applications they are huilding (live order entry torus or billing and financal applications, for example)

Once their application is done, their can take new components out of it and some them in the repositors for

other developers to use WHY THEY RE DOING IT

An executive mandate for more software name anumod this latest effort Larlier repositiones were kept in Lotus Notes, so to get to their, users had to open up yet another application. which took time and memory. Also, developers smeels didn't want to share. helicy ing that whatever someone else built they could build hetter. Monnoring who uses what on the intrane

will indicate whether the new medium will hoster success. MCI is just now getting the tools needed to judge the amount of reuse

HOW LONG IT TOOK TO SET UP Kremer decided to use the intraner in July, started building the repository by September

and had it up and runnine hy Oct. 12. It has grown from fewer than 20 components to abour 150 today.

CHALLENGES

Finding a tool for complex text watches. Kremer wants to store doc-

how-to text for MCTs 6,000 develumentation with the code and most tools search only for keywords or phrases inside the components

BUILDING TEAMWORK

Kremer can monitor what projects different offices are working on and mut staffers en tour howith our smoothinformation. Tes serv helpful, especially where we're so spread out across the country," he says. 'We saye a lot of time and money just by putting people in touch with one another

'Try not to be parochial. Don't say, Here it is Use it. If you made other people, they'll land of help you do your work. If they commit some time and effort, they'll be more likely to use it. If it was just me doing this project, I guarantee no one - well, hardly anyone - would be using it."

Kremer wouldn't specife how much MCI has spent on this repository; but he said the higgest expense came from manpower. Kremer and his staff of six are all focused on working on the proj-

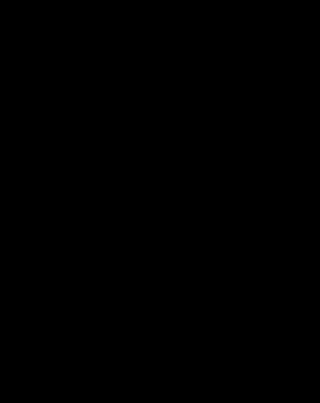
TECHNOLOGY USEO

The repository is housed in a dedicated Hewlett-Packard Co. HP 9000 server and built on a straight file system, but Kremer says that won't scale up very far. He is now looking at using Informer's Illustra data store or Object Design's Object Design.

Gaudin is a Computerworld semos editor for illooksation development

COMPUTERWORLD INTRANETS is published monthly on the Jassith Monday of the month as a supplement to Computerworld. Editor Ann. M.C.nov. Designer Winds J. Reifens. Annuau Managing Editor: Kombellee A. Smith, Computerworld Magazines Editor Alex Alper Plant 1800: \$43-61"s, 1-med some mesory@encome for 1508: 8"5-8931

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Today, the repository has blossomed

with 10 times the amount WHAT'S ONLINE of information it held when it first went online last October. And not only are developers sharing information, but Kremer is also keeping an eye on who is using it for what as it connects teams of developers from around the country who may be working on similar projects. We save a lot of time and money just by purting people in touch with one another," Kremer says, "And I think people feel better knowing they're not the only ones on this

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can take new components out of it and store them in the repository for other developers to use. WHY THEY'RE DOING IT

An-executive mandate for more software reuse spurred this latest effort. "Try not to be parochial. Don't say, Earlier repositories were kept in Lotus 'Here it is. Use it.' If you involve other Notes, so to get to them, users had to people, they'll kind of help you do your open up yet another application. work. If they commit some time and which took time and memory, Also, effort, they'll be more likely to use it. developers simply didn't want to share. If it was just me doing this project, I believing that whatever someone else guarantee no one - well, hardly anyone - would be using it." built, they could build better. Montoring who uses what on the intriner will indicate whether the new medium will foster success. MCI is just Kremer wouldn't specify how much now getting the tools needed to judge the amount of reuse

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CHALLENGES

COMPUTERWORLD INTRANETS is published monthly on the fourth Monday of the month as a supplement to Computerworld. Editor Anne McCrory, Designer Wendy J. Resfew; Australia Managing Editor: Kimberles A. Smith; Computerworld Magazines Editor: Alan Alper Phone: (800) 343-6474; E-mail: anne_mccrory@cu.com; fax: (508) 875-8931.

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Buyer's Guide

Push-y Push-y

Its iten or YOUR DAILY PAPER, File selector, better action until on an imple even your select ratio until on an imple even your select ratio better brower may be furnished. "Poll" the technology is a mineral part of World Wide Web sites to gather news is a thing of the past.

By Ross M. news is a thing of the past Greenberg if the news — general, financial, corporate and enterprise, along with software updates — can come to you with no fuss or muss.

> True push technology is the unscheduled delivery of content data to an end user, although some vendors force fit scheduled delivery products. Most push products require a client element of some sort — software to catch the incoming packers of data and delivery instructions and process them. Some are stand-alone clients, but many use a browser for display, Microsoft Corp's internet Explorer 4,o and Net-

> scape Communications Corp.'s Navigator 4.0, both in

beta, promise to include push client software.

There are three pieces of push technology to consider the client software, the channel server and the content on the channels. Some servers are sold for intranet and enterprise use, and some vendors lease delivery capabilities on their server, or "channels," to delivery information across the internat. Ulti-

mately third-party content will determine which technology platform wins. Push products can be split into two main groups: scheduled polled push — included in this, the first of a series of push technology reviews — and unsched-

uled push. This series will focus on products that could be useful in a corporate environment, giving organizations a means to get an announcement, product or marketing message to subscribers, customers, potential customers and employees. We are excluding consumer oriented products generate toward using pre-estating channels rather than creating such channels.

Post-y, Pest-y, page 74

Push-y

PRODUCT: Castanet ANY Marimba, Inc., Palo Alto

Calif www.marimba.com PROS: Integrated Java environment for nitter/server and nuner/client: rich annel selection, enabling rich content CORS: Large channel applets: Java envi-ronment is slow and bulky: transmitter

requires Java expertise PRICE: Tuner/client: free; Transmitter/ server, free evaluation for five users; too users per hour license, \$1,000; unlimited license, \$25,000; interface editor. \$495

MARIMAA'S CASTANET IS a full-featured lava applet viewer that lets usees select from a wide selection of content channels, each offering its own content and undate schedule. Whether it's delivering news and crossword puzzles or deploying remote applications and updates, Castanet does its job well. However, a reasonably modern system with at least a 100-MHz Pentium CPU, a fast hard drive and at least 16M bytes of memory is a must. As with any Java-based system.

the trade-off for portability is speed. A content provider produces channel nformation, which is distributed from a server running the Transmitter software, multiple channels can exist on any Transmitter. It is reasonable to expect Transmitter operators to be able to lease excess

The downloaded content is stored on the local hard disk, and it can consist of anything from a simple presenta graphic to stock quotes and full-fledged Java applications. The execution of the now-local content will be within the so-called "sandbox" protected envicomment, similar to the ones presented

To mitigate the damage an errant or malicious channel's content can cause. Castanet restricts reading, writing and executing of files to a single directory. And network connections within the sandbox may be between only the client and the transmitter. Other connections aren't affected.

If a firm needs to get its message or ntent out to subscribers, it must contract with a channel delivery service or set



up its own Transmitter software

The Castanet Transmitter is a server application that can send a channel's updated content to subscribers' tuners when they are first initiated. This usually occurs at system start-up and at userdefined intervals thereafter. Different channels need different update schedules; for example, stock quote channels should be updated every few minutes-Hypertext Markup Language (HTML) subscribers can minimize the perfor mance drain on their systems during up dates. Subscribers to non-HTML chan-

nels don't have this or When the channel's content is undat ed, the Transmitter is notified via a "publish" request in the Transmitter's interface. The new content is then made available for download, along with the suggested update frequency for new subscribers. The channel's existence is published on the Transmitter for public ption unless it is marked as hidden, in which case it is available only to those who know its precise name Castanet's next version promises additional security, with password access and

Only the changed content on a channel is actually downloaded. A graphics-laden channel, for example, would have to be downloaded in its entirety only when it is initially subscribed to.

To build an application channel for transmission, you need to program in Java. Several class libraries are availa to help programmers create a rich framework, and experienced Java programmers should have no problem pick up tools from their extensive method

Castanet isn't a contool, but it is optimal for the typical enter prise environment. The transmission of daily messages, inventory updates, appli-cation updates and other shared items shows off the product's capabilities. O



PRODUCT: BackWeb Wr BackWeh Technologies, San

lose, Calif., www.backweb.com PROS: Wide, deep selection of channels "polite" and unobtrusive seent very scalable: server application programming in-

COMS: Pricing schedule unfamiliar to most buyers; expensive to get started PRICE: Client: free; Server software: for Internet, \$10,500, plus \$1,250 to \$7,500 per month; for intranet, \$10,500, plus a onetime charge of \$15 to \$35 per user

BACKWSE TSCHHOLOGISE' BackWeb rovides on its server public charmels provides on its serve, purchasely full of content, including news, weather technology news, newsletters and more For a corporation ready to get its message out to the public, it's a great technology that's all set to go.

But the BackWeb package is going to drive purchasing agents nuts. When they ask the corporate purchaser what it costs. the answer starts with "Well, it depends After licensing or leasing the server technology for the outlined yearly price, the number of times your message gets unitted across the Inter-

net determines the eventual price. For larger intranet customers, however, the price is set on a per-user basis after a one-time purchase of the server technology

Back Web ralls its product a "push/pull" hybrid, meaning the client lets the server know when it's socilable for content reception on a scheduled basis. The serves then delivers updated inforion to the client, but only when the client gives permission and the physical

connection has been quiescent for a time - BackWeb's "Poiste Agent" technology. Channels deliver "InfoPaks" that car contain "InfoFlashes." or brief usually active, trasers of information. An Info-Flash, which is often an animation, may contain audio or video content, or informational, educational or marketing information. The rest of the information is accessed by clicking on the teaser. This

information may be implemented as of users: The hole discovered in March in HTML files given to your browser, screen layers or even as background wallpap The wallpaper and screen saver can be set un antomatically

InfoPaks include files tied together by a BackWeb Authoring Language Inter-

10.0

BackWeb calls its product a "bush/pull" hybrid

face (BALI) script. BALI is a full-featured programming language that allows animation, position determination and controlled movement of visual elemen The BALI editor allows relatively rapid and easy construction of visually stunning but potentially complicated info-Paks. They, up turn, can call for the display or execution of other parts of the InfoPak. But security is left in the hands

Microsoft Corp.'s Internet Explorer 3.0 could have allowed a mulicious InfoPak to adversely affect your system. Likewise, each subscriber is alone in deciding whether to execute a downloaded program. Because the user had to subscribe

to the channel and presum ably knows and trusts the channel provider, errant programs are more of a worry. ust as ActiveX download are fraught with risk.

BackWeb lets users broa cast InfoPaks to all of a channet's subscribers, narrow utine an Infonsk to subscribers who fit certain categories based on their channel sign-up profile, such as age or gender.
The distribution of files.

such as viral scanner signa ture database updates, is easy with BackWeb. Personalized channels allow server-side registration in order to even subscribe or access a channel Downloads from the channel are then

polled and end-user permission is sought before the downloaded material ix installed. (1) Granderg is a reviewer and developer in

New Kingston, N.Y.

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Case Study:SAP

BANCS, POUNDS, dollars and rupees just didn't add up at W. R. Grace, in any In 1994, chemical and materials company W. R. Grace & Co.'s financial services staff was using disparate systems that didn't communicate with one another or with manufac turing applications. The systems also didn't deal well with international currencies. The company, then going through consolidations and spinoffs, wanted to get away from regional man-

agement and operate globally to tie topether its 20 000 employees. We knew we couldn't piece together plobal information with the montage of systems that we had," says Stephen Noone, vice president of financial ser-

vices development at Grace.
Grace undertook a general review of its financial services, and learned that it scored lower than many first-tier companies on the overall cost of providing financial services. More time was spent collecting information than analyzing st, which left the company with an overload of paper and not enough answers.

Grace needed a new underlying system, so it chose SAP AG's R/s integrated financial suite. R/3 had the most complete graphical user interface, offered good international currency and language support and was several steps ead of the rest of the applications market in moving to client/server, says Mary B. Akyuz, manager of software engineer-

ing at Grace's Boston IT service center. Grace started the companywide rollout with its construction products and cansealant business units in Boston. Once it began the SAP implementation, Grace officials decided that the sales and distribution and production and materials management units should be moved to SAP as well. On lan. 1, it migrated 600

users in these business units We interviewed Grace officials from the information technology and business sides to find out how a company implements SAP, including cost justification, implementation team development, and management and IT processes.

To justify the expense of a major overhaul (Grace declined to release budget fig-

BY AMY MALLOY FALLS

ures). Grace came up with a vision of what the company would look like operating with SAP and included anticipated cost savings after it removed its mai frames. The promise of increased pro-ductivity in the business units and the elimination of jobs in the accounting and sales units provided the strongest justification. "The real currency you use to jus-

tify a SAP implementation is your people's time." Noone says Using SAP, Grace financial analysts wouldn't have to spend time "hunting and eathering information." Noone says After entering information once, it would be at their fingertips, letting them find fo cused answers. On the old system, it would take a significant amount of time to find data before analysis could even begin says William P. Porcello, director of shared financial services at Gence

The switch to SAP required a full-time staff devoted to the project. Rather than hire outsiders with SAP skills, Grace recruited more than 40 staff members from the business side to work on SAF implementation teams and used the equivalent of 10 to 15 full-time IT people. The project took the team 14 months to complete, with many 80- to 90-hour weeks. "Using full-time people is key. They have to make it work because it is

what they live and breathe." Noone save. They did make it work. The project fin ished on time and on budget. But attri tion took its toll. Noone says. A quarter of the team members - primarily from the husiness side — found the salaries of fered by other firms too enticing. "Some of these people could double their salary by going to work for a consultant,

Noone says. Some team members are now working on regional or worldwide SAP implem One factor that kept the teams together was that members want ed the project to succeed.

says Henry Hess, director of finance implemen tation at Grace. Those teams differed rom past implementa tion teams because the husiness side took the

lead instead of IT. "IT was the enabler rather than the driver Akyuz says. The business staff members who use the system drove the process. Along the way, Price Waterhouse in structed the SAP team, primarily on the ess side. Price Water use provid

ed discipline, kept the team on track and enforced documentation. Hess says. Looking back, Grace officials say the wish experienced SAP consultants had been brought in at the start. "When we went live, we [brought in consultants], but we should have done it on the front end." savs Charles N. Tremblay, manager of computer technology services Grace's Boston IT service center

Grace converted 40 legacy systems. During conversions, the team used some supplied code, but they had to write as interfaces and more than 65 forms and reports. They also customized some programs, such as an automatic cash pro-

gram that didn't work. Akyuz says During implementation, Grace dec ed to stabilize on a single version until

the system was running. The frequency with which SAP releases new verconvinced the firm that it was easior to set the sys-

We knew we couldn't piece together global information

terns regulated rather than iusting to the changes

new versions. SAP tends to sast have major releases, not only fixing bugs but add ing functionality, Akyuz says. This causes problems because the new functions may not be well-coordinated or the bug fix may interact with a function that changed during the releases. Alyuz says.

When Grace rolled out the system, it had to acquire new Hewlett-Packard Co servers. But it saved money by using many of its existing PCs, although some needed to be upgraded. Tremblay found that users need 16M bytes of RAM to run SAP - a 486 11-MHz Pentium will run it, but it's sluggish. Most machines still run Windows 3.1, but the company is preparing to migrate to Windows os, Tremblay says.

Once it got down to the nitty gritty of SAP, Grace found a few surprises. SAP performance monstoring tools aren't reat, Tremblay says. Grace now uses an HP utility for better monitoring.

The company also discovered that me of the performance and tuni problems had to do with the interface between SAP and Grace's Informix Corp database, which is a fairly uncommon combination. []

Malloy is associate editor of Computer world's Buyer's Guide.

BUYER'S ADVISORY

Tips from W. R. Urace

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BOOKED ...

o BRONSON JUST FINISHED UP a photo shoot for Entertainment Weekly. Today he spoke to every TV and radio station in Manhattan
and some networks besides. He is promoting his new novel,
The First \$20 Million Is Always the Hardest.

He's riding back to the New York Palace Hotel with his publicist,
who's excited because the book just hit No. 2 on The San Francisco Chronicle bestseller list. Tired though he must be, Bronson finds time for a cell-phone **Bander** 1999 R.**



By Douglas Coupland 1995, ReganBooks, New York, Trade paperback; 371 pages; \$13. Douglas and Wah eiter A group of stunted

crosoft employees in their 20s (Coupland coined the phrase "Gention X*: it was the title of his first novel) form a start-up in the w basement. Their hot pur-

lead character's parsuit of a breakthrough object-onented application (essentially cyber-Legos) tours cultural touchstones ranging from the Osmonds to MTV

The First \$20 Million is Always the Hardest By Po Brosson, 1997, Random House, New York. Hardcover; age pages, \$21. Po Bronson Web site: members gol.com/pobronson/index.htm.

A gung-ho start-up invents a brilliant device called the "Hypnotizer" that renders operating sys tems irrelevant. (Sound fa miliar?) This underpins the "VWPC," which can revolutionize computing if only the tiny start-up can birth it before omnivorou tech firm Omega Logic



The Last Best Thing By Pat Dillon. 1996, Simon & Schuster, New

York. Hardcover, 350 pages; \$23. Web site: Essentially a fazor. Heroine Maria Cisneros

tries to impose some honor on a shady atart-up company faunched by "visionary" J. P. McCorwin. She finds just how little honor there is in the Valley (which was

agog during the serialization as real-life insiders tried hard to figure out which of the book's insiders were based on which other real-life



BOOKED

CONTINUED FROM PAGE 81

interview from the car Bronson's book is the latest in a new breed of novel launched by Douglas Coup land's 1995 Microsofs and followed by Pat Dillon's The Last Best Thing, which was published last October. The books feature three-dimensional, fully realized characters who love, hate, aspire, envy - and work in Sili-

The books are succeeding both in the Valley and beyond. Publishers are notoriously tighttipped with sales figures, but The First \$20 Million made The New York Times Business bestseller list (the "Business" rationale is anybody's guess) and remains planted on the Chronicle's list. Producer/director Harold Ramis has purchased the movie rights. Bronson's book has been enough of a crossover success to get the author featured in not only En-

When The Last Best Thing was serialized online by The San Iou Mercury News, that newspaper's site saw its bit rates increase nearly 20%. And Microsoft has become a cult classic; it's a knapsack staple at universities Of course, computers and fiction are hardly strangers. But in the past, they tended to intersect either on the science fiction shalf or in thrillers that featured

retainment Weekly, but also

Time magazine.

atocial needs whose can't-eet-adate rage was as likely as not to

explode into a killing spree The new books are different They may signal that the general public is now able to accept nputing as a milieu, just as the hospital and the courtroom have long been accepted. If so, this may be yet another Internet-driven breakthrough

According to methodology exnert and author Edward Your don, it's simple: "Computers are in the mainstream because of the 'net." He pauses. "That, and everybody knows who Bill Cates is." Gregory H. Anderson, chief

executive officer at Andreson Financial Systems Inc. in Spring house, Pa., agrees that "IT ter minology has entered the vernacular more rapidly since the 'net." But he says the change began before that, when PCs found their way to end users' desktops, "Now |that PC| is yours, for better or wome," be-

There's another reason for curiosity about Silicon Valley. "Money," Pat Dillon says "Spread among people who'd never had it before."

Dillon is an editor at The Mer cury News, and he remembers when what is now Silicon was the sleepy Santa Clara Valley The astonishing generation of moulth have in a natural draw then finance made Texas and Wall Street favorite settings during the 1980s. Dillon strove to make The Last Best Thing as outrageous as possible, but he says he found the Valley "unsatirable." After all, when com Duter company executives are fighting the local zoning board for the right to build their home to the scale of the rod woods that surround it, what do was do for a topper?

for writers - much the way oil

In Bronson's book, the elite

fastest "big iron" (blindingly fast chips, in this context) are known reverently as "ironmen." The author consciously pilfered this term, which connotes the physical prowess of the triath lete and attached it to the field of science 14a ironmen show "devotion, discipline," Bronson says. "I wanted to get away from the myth of valoo types. peek types.

Instead, Bronson (and Dillon and Coupland) take pains to "draw interesting, well-rounded people into it," Brosson says People are perceiving technes as heroes rather than villains You've got to set past the seek characters, post technology as a plot device for some terrible thrilles

The characters in the three lovels tend to be young, talented and difficult to motivate they're ambivalent about stock options, managerial roles and secure futures. Their jobs san most of their lives and spirits Yourdon thinks he knows why His book Death March (CW March ut is about the growing popularity of the erind-it-out

amn the torpedoes project.

Yourdon, who writes fiction

creserb and some of The First \$20 Million. He says younger ogrammers are most vulnerable to Death March projects. What's glorified in these books is not just computer geeks, but Generation X kids in their 202 who are fanatically attached to their projects." Indeed, in The Last Best Thing, heroine Maria Cisneros spends her Priday nights on the health-club stair-

himself has read most of Mi-

...........

climber, ailently sympathizing The new code writers who turn out the books are

succeeding in Silicon Valley - and

beyond.

with other simples. In Microsofs the core characters live together in a group home that runs like a dying fraternity house.

START ME UR

Some of the novels' finest detail comes during pursuit of the Silicon Valley dream: the tech start-up. The Microsoft coders set up shop in one of their parents' basement - in what was the rumpus room "when society still manufactured Brady chil-

In The First \$20 Million, the start-up is housed in Single-Guy Heaven: over a secretarial school. En route to their first big venture-capital meeting, the principals realize with horror that they're all wearing shorts Solution? They buy four pairs of identical plaid golf pants at a nearby country club.

Idealism is another common trait. The characters salute ner ther flag nor man, but they do believe in the superiority, the dness, of their technol This rings true - to a point. *In my experience hiring

young application programmers, interesting work on 'worthy' operating systems is almost as important to them! as money," Anderson says. However, he adds, 'Money is never far from the forefront, even with ideal-

And idealists are crushed every day in Silicon Valley. Their ideas are stolen, bought for a pittance, co-opted, reverseengineered with savage akill. Bronson suspects this is the reason young entrepreneurs there go out of their way to act

"People don't want to create highfalutin terms," he says, out of fear that any such entherstasm will present too tempting a target. His characters often define things by what they are not. One character is described as someone who "didn't sleen with makeup on. She wasn't frail. She wasn't frilly. She didn't wear nice shoes when it rained, and she didn't own five pairs of comfy sweatpants."

Despite the snake pit that Sil-icon Valley appears to be, all three novels share a final optimasm. "You hope there's some redemption there." Dillon says. You hope that beyond that screen is some soul.*

Ulfelder is Computerworld's senior editor, In Depth. His Interv address is store_adfolder@cu.com.

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By Rochelle Garner

rwarld May 26, 1997 (www.computerworld.com)

t's great to work in information systems! The best pay. The chance to use the hottest technologies. Dream bosses who treat you as trusted partners in their business decisions. As if!

While most IS staffers say they love their chosen profession, they also revealed in *Computerworld*'s Annual Job Satisfaction Survey that they hajotheir working conditions.

You'd think companies would be doing a better job keeping their IS staff fit and happy. After all, this is an industry where demand for skilled professionals outstrips supply by 15%, according to Castruer Group, Inc. in Samford, Com. Gartner predict the shortfall will double in two years. And yet, something is strangely wrong, Strees is

And yet, something is strangely wrong. Stress is becoming almost unmanageable — 95% of all senior managers, 90% of all middle managers and 86% in the rank and file describe their days as "very stressful." By a ratio of 4,40-1, they say workload is the culprit. Small wonder, them, that few believe they are paid a realistic salary.

"When you look at my compensation and consider my impact on business and what would happen if I didn't perform well, then I beliver i'm adequately rewarded," says one IS middle manager at AT&T Corp., who asked not to be identified.

Another equally publicity-shy director said, "I

Another equally publicity-shy director said, "I believe I'm providing value, but I can't measure it — to the point that I don't even know if my pay is commensurate with my performance."

That's quite a statement from an IS director what's quite a statement from an IS director who concretes 350 people and all information technology at a large insurance firm. The problem: "My company sees my role as operational, rather than strategic. That means I have very little say in coming up with a business solution. And it means that my company racety acknowledges IS's contribution. It's finattrating, feeling so disconnected from business results."

If a question of respect.

"I'm paid well, and I'm expected to know a lot."

says a manages at a large computer manufacturer.
"But when my opinion is different from senior managers," I'm obviously a lesser person, not their peer. I often tell myself I d-take a pay cut for a respect increase."

The comments above pretty much sum up the cross of Computarwold's survey. Sure, those responding to Computarword's questoomaire cited their pay, their relationships with managers and their work environments as sources of disastifaction. But delve deeper, and you find them expressing auger and frustration at not being beard.



You talkin

hat certainly was the case with Ken Jenkins, programming project manager at Total Systems, Inc. in Columbus, Ga. Things got so bad for lenkins that he quit - without first lining up another job

"Sometimes you have to kick management in the teeth to get their attention," Jenkins says. He hasn't left yet, but he got their attention, all right Now management listens to lenkins, whose more person team converts banks to the company's turnkey credit-card processing system.

Jenkins' source of desperation? His workload. which encompasses at least 300 hours of overtime per year, all on weekends, without overtime pay Worse, each person on his team has been with the company less than a year.

"I have twice as much to do as any other team leader, when most of my people have only six months' experience," Jenkins says.

For years, Jenkins has been trying to get better compensation for his staff, to no avail. Now, upper managers are listening to what he has to say Which is why, at least for now, Jenkins remains at

Total Systems. But his intended resignation indicates the degree of Jenkins' frustrations - that higher-level executives were deciding what and how lenkins' team should be doing without regard

to how those decisions would affect the customer. "I've made my suggestion on what needs to be done, and everyone's very positive about it," he says. "They say I have valid points, and maybe they could be implemented."

Whether they are remains to be seen. But lenkins says he feels a lot better just knowing he's finally being heard.

The same can be said for Joe Morgan, team leader of client/server development at Hastings Books, Music & Video in Amarillo, Texas. Morgan says handling an increased workload with fewer people was bad enough. Stress was petting out of hand. Worse was the fact that agement didn't listen to him about the inherent difficulties of Powersoft's PowerBuilder development.

They drastically don't understand my particular environment, and they don't realize how much they don't know." Morean says. Fortunately for Morean. Hastings has a corporate culture that gives everyope, at almost every level, a voice. He just made sure management

heard has voice — by demanding to evaluate them. I had some harsh opinions in my review of them. But they reacted positively to everything I said," Morgan says. It's a much-needed change for Morgan, who has felt immense frustration at his managers' apparent lack of respect for his tions. "I have my own philosophies on how an MIS department should be run. And I'd be hannier if I could present those ideas with some degree

of acceptance or at least hear why they aren't accepted," he says. "In the past, my ideas were shot down with just a 'no."

istening to what an employee has to say isn't the only way a company can show respect. Promotion and money do a lot in that department, too. But how much money can actually compensate for that heavy workload? And how far can someone from IS actually rise?

"People in 15 have no career path whatsoever, says a manager at a large Western university. "Plus, we are far below the industry in pay." He stays because of job security, the working environment and the benefits, he says. It's a theme echoed throughout the industry: The pay sucks eggs. Advancement opp are nil. But you can't beat the benefits, or the people or the work.

So what would make the university manage happier next year? To pay my emple petitively, so I could hire the best people for the job, rather than take what we can get," the manager says. "I'm feeling Job Satisfaction Survey, page 39 LIKING THEIR JOBS (SORT OF) 28% 21% 46% 42% 47%

3% 12% 11% 18% 3%

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JOB SATISFACTION SURVEY

CONTINUED FROM PAGE BY

more and more stressed just trying to do the work that's expected with people who stay only a few months."

It all seems so crazy. We're talking about IT, remember? The skill that companies around the

member? The skill that companies around the country are desperately trying to fill. The unidentified IS manager at AT&T also wants more money — but not for money's sake. "I wouldn't make a

lateral move just for a higher salary," she says. "I want to be in charge of the technical decisions within a business and to make changes that affect everyone's ability to be productive. I say! want more moreey only because I don't want to under-

sell myself."

Again, it comes down to respect — from the company itself and whether the company views IT

company states and writtener use company views asset. MCI Communications Corp. views technology in just such a light. And the result is "responsibility, respect and empowerment." says Lance Boxes, chief information officer at the Richard-

and empowerment: says Lince Boxer, chief information officer at the Richardson, Texas, company.

"The biggest difference between MCI and other companies is 15 isn't wrapped up with human resources or any other back-office responsibility," Boxer says. "I deal with core business, and that's the

difference between me and ClOs who are dissatisfied with their jobs. When technology is a mission rather than a business, you can never be looked on as part of the team."

And if you aren't part of the team, you're just another hired hand. And where's the respect in that?

back-office re deal white condifference be the changing to business, you part of the tex And if you you're just at where's the re

Part of the AM

leatly, Bowr is part of the team. So, too, is Robert Spiecs, executive vice produced the spiece of t

Computerword's [ob Satisfaction Survey.
Sure it belps that each man heads his own department. But somehow these two enjoy their work with more gusto than most other 15 heads.
What bootts Bouer's and Spicer's satisfaction quotient? Both have be-

quotients' Both have become as interested in business as they are in technology. Both work for organizations that value technology for the asset it can be. Not surprisingly, each has developed

piness — for themselves and for the people who work for them.

"In the past, creativity was coming up with new

learly, Boser is part of the team. So, too, is Robert Spicer, executive vice president Active Chery Chase Bank in Chery Chase, Md. But these two mess problem that's

ness problem. That's where the IT managers of the future have to step up. If they can't do that, they will always be reporting to someone else, always be at the operational end."

Think of it as opporturity. Spicer says. Sure, everyone says to really get ahead in business, you have to start thinking about business. Many people in IS hate sentiment. Spicer's advice: Stop thinking that way. "This is where IT

folks are missing an op

technology for the asset it can be. Not surprising, p. each has developed a strong philosophies regarding the pursuit of happiness—for themselves and for the people who by that comes of that is preemedous."

Job Satisfaction Survey, page 91

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ANNUAL

JOB SATISFACTION SURVEY

a good

CONTINUED FROM PAGE 89.

there's no greater high than blending technolog and business. But he also says he realizes that many IS staffers who report to him need something else. They need to feel they are an integral part of the organization. They need to be listened to, recognized, rewarded

In his first 12 months, Boxer personally met all 8,000 people in his division. And in the meantime, he increased salaries, reorganized the division around centers of excellence, doubled training, upgraded all tools, computers and equip-

Talkind

ment, and instituted job-sharing. Sex time and

"I want people to say they work in the best IT organization in the world," Boxer says. And to improve communication. Boxer regularly sends out letters to his staff, holds employee meetings and strategy sessions and even "pops in to" training sessions to sit with people at the lowest ranks. "I don't want them to love me; I want them to re-

spect me," he says. When you respect the big guy, you can only respect yourself, too.

EVERYONE HAS THEIR PRICE 62% 61% 65% 44% 47% 46% 36% 47% 37%

ut how do you respect the big guy when you can't communicate with him? porate rungs. That's the question plaguing many peo-

ple in IS. The answer, Spicer says, is to get creative. "A key part of any job is to take poor communication and turn it into good communication," he says. "If you're on the receiving end of poor commu-

nication, you have to figure out ways to get a clear message," Spicer says. "It's my job to get creative, in every way, to get the information I need to make sure a problem gets solved. "That's real life. You have to learn to adapt and to put that environment

to your advantage."

We're not talking about technical expertise. Instead, it's the art and skill of creative problem: solving at its most fundamental level: communicating with people who place business issues above those of technology. It's a skill that all peo-

ple in IS, no matter their rank, need to hone. Because when push comes to shove - which it always does - it's not how well you program or analyze a database or configure an architecture that earns you respect within a company: It's how well you understand your company's business objects and how well you convey that understanding to those above and below you on the cor-

No, it doesn't seem fair. But history has shown that people mistrust and fear what they don't understand. That's as true in business as it is in society. To gain that trust, and managers' respect, people in IS must learn to love their work for a different set of presons

"I eat, drink and sleep this stuff because I love it so much," Spicer says. "And there are people who work for me who love it with the same passion. But it's not that we're geeks and not that I haven't been a geek. It's just that I can't think of another career where you can mix business and creativity to deliver products the way IS can today.

You want more respect? Take a hint from Spicer and Boxer, who both say the key to earning respect is becoming an integral player in a company's business. Accent, please, on "player." No matter what your position in 18, get to know your busi-ness colleagues, their workslay frustrations and

what role you can play in making the business score big. The ball's in your court. Now run out and play. Garner is a freelance writer in San Carlos, Calif.

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IS supports Sun's end run on encryption

CONTINUED FROM PAGE 1 heavily on "sneakernet" be-

cause U.S. export regulations severely limit its ability to buy and use advanced security soft ware for its laboratories around "I can't set up a secure communications system worldwide

Sun in southatd

es as a U.S. exper

because I can't give the other sites the encryption technology they need," said Alan Davidson, staff counsel at the Center for Democracy and Technology, a nonprofit civil liberties group in Washington. "It makes it tough for American companies to communicate internationally.

because people on both ends need to have the same technol 'It takes years, in some cases,

to develop new compositions. said Skip Deneka, senior vice president of science and tech nology at Corning, N.Y.-based Corning. "If our competitors got their hands on the informa tion, they could frave all that time] to get to the same place."

Hence, some information executives cheered last week by Sun Microsystems. Inc.'s bid to end-run that export policy. If Sun succeeds, the IS executives hope to share research and financial and oldering information without fear that their secrets will be

LINITS PLACED

U.S. export policy is focused on limiting the spread of advanced encryption hardware and software. Encryption technology electronically scrambles the information to mask it from computer eavesdroppers The regulations prohibit the

technology from being exported outside U.S. borders, whether by a vendor, such as Sun, that tries to sell it, or by a firm that tries to ship it to international offices, suppliers or buyers. Sun may have found its way around this policy by selling data-security software through a Russian supplier, Elvis and Co. Sun has a 10% equity stake in

the Duccion form Users and industry observers reed that U.S. computer vendors by and large have the strongest encryption technology on the market

Although a U.S. manufac er could buy encryption software from a company in another country and distribute that throughout its supply and sales network, it is generally thought

to be too weak to bother with. Joe Kretz, director of inform tion technology security at FMC Corp., a \$5 billion chemical and machinery manufacturer in Chicago, said his company has been burned by a lack of strong

Kretz sald one of FMC's offices in Spain was broken in to and what were most likely industrial spies made off with a PC and disks filled with classified information on a new product, including drawings and

"We suffered some signifi-cant information losses," be

said. "The information hadn't been encoded because we had been waiting for a robust technology that we could use with nternational companses." But the U.S. government's stranglehold on the security market may be jarred loose, ac-

cording to Ted Julian, an Internet research manager at Intertional Data Corp. in-Pramingham Mass 'It's just a matter of time before somebody did what Sun

did," Julian said. "Sun has opened the gate for others to at least watch what happens and follow suit."Cl

Goodbye to glass house

CONTINUED FROM PAGE 1

the school's elevators, with a CMOS system the size of a refrigerator. That freed up eno space to install high-speed disk and tape storage systems, shid Rod Feak, director of systems services at the college. But what has been missing in

CMOS systems until now is nower. Water-cooled systems use 60- to 65-MIPS processors which could handle most of the heavy lifting thrown at them. Perviously CMOS machines could run only in the 40- to 45-

MIPS range. For example, after installing a 45-MIPS CMOS system, one systems programmer at a major car manufacturer said be had to fine-tune the box because some high-priority batch jobs took longer than they did with the enpany's water-cooled main frame, which had a number of

64-MIPS processors. To address that, sou IBM on June 10 will announce its long-awaited G4 CMOS MIPS engines

And Hitachi Data Systems Corp. in Santa Clara. Calif., nex month will ship its own similar

Pilot systems. Amdahl Corp. in Sunnyvale, Calif., plans to offer a similar engine late this year or early next year.

PURCHASING FACTOR
With all three major mainfr

vendors weighing in, led by IBM, the competition for this new CMOS business will be Serce. Interviews with a halfeen users found that price per MIPS was moving to the fore-front in the CMOS mainframe

purchasing decision. As mainframes become more edable and easy to maintain. users consider the boxes more interchangeable - almost like a commodity product.

"Price is a main issue for us," said Scott Denison' manager of technical support at Attorney's Title Insurance Fund in Ottando. Fla., which recently bought a 49-MIPS engine HDS Pilot sys tem. "We are a regulated industry, so we have to be cost-effective in our platform decisious. That may prompt some ven-ors to drop their bids between \$6,000 and \$8,000 per MIPS

cording to a recent report om The Clipper Group, Inc. in

Wellesley, Mass, Mainfram prices last your howered around S12,000 per MIPS, or more. But CMOS pricing won't affect the very high end as

Analysts said HDS, with its 150-MIPS Skyline engine - a combination of CMOS and water-cooled technology - will continue to take a chunk out of the CMOS-only business.

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COMMENTARY

Make it simple, Netscape

David Coursey

he nice thing about being a computer industry curmudgeon is that I'm only rarely disappointed. So I wasn't surprised when Netscape recently told Wall Street that its growth will slow down and that the market is becoming more competitive.

Microsoft makes such an announcement seemingly every year - it actually was fun to see supersalesman Steve Ballmer selling pessimism at a recent analysts' meeting. When Microsoft does its hangdog act. Wall Street just winks. When Netscape does it, a chill descends over Mountain

View and the stock price takes a big hit. Is it curtains for Netscape? Only if you're one of those who believed its \$100-plus share prices actually were justified. Having taken the more sober view point - that companies are rarely as bad or as good as Wall Street says they are -

Netscape seems well-positioned to face Much was made last week over the merger of Netscape's Navio with Oracle's

Network Computer, Inc. Some looked at the deal as the first stage of a Netscape sellout to Larry Ellison (who creeps into way too many columns these days). Such a deal is so highly speculative, it

So where is Netscape? The com scape? The company seems to have realized that it can't beat Microsoft at much of anything, yet isn't going to get tossed from the market, either. My bet has always been that Netscape would end up playing with 20% to

10% of the market. Maybe less, hard to

That would make Netscape a nicely enfitable company that sells intranet servers to the Fortune 1,000, especially to companies that appreciate a multiplatform approach. (Netscape has 20.) Java won't give Netscape much of a boost because Microsoft will steal the standard away from Sun, which could become a perpetual catch-up player. My concern about

Netscape is that the pitch won't sine to cus tomers and clearly difentiate it from Mi crosoft. The company is overlooking a potential sales story based on simplicity rather than a feature set. Netscape must be feature-competitive, of course, but

ion is that corporate custom ers don't want every possible feature as much as they want well-chosen features that users actually can use.

In a 20-minute demonstration, Microsoft can fly through a dozen applications and tooks, starting with Internet Explorer 4.0 and ending with Word - with stop along the way at InterDev. Access and Virtual Basic. It's all very powerful, but also dizzying in its complexity. At the end of the demo, you're left with the feeling that you'd have to be an MIT grad to string it together into something useful. Netscape sometimes falls into this rap, too. But Netscape doesn't own pro-

gramming languages and is more depen-dent on third parties to build tools. Still. in a game of "who can confuse the cus omer best, yet still get their money." Netscape can't possibly win. So I'll repeat my call (and I think it's

the call of a large number of corporate customers) to Netscape: Build system that are easy to select, install and use. If that means from but better-chosen fratures, that's OK. I'd rather have fewer features that really benefit me and my users than be lured to the jagged rocks by the siren song of features that are hard to employ and not really needed. (I

Coursey, on analyst and consultant, is editor of "coursey.com," an online newsl available at www.coursey.com. His E-mail. address is devid@coursev.com.

Electronic commerce: No place for wallflowers Frank Haves

idja hear on the news how Mother's Day was ruined for millions of moms because the computers collapsed at FTD? The flowers-by-wire company's most important computer system crashed a few days before the holiday. In the end, the backup sys-

tems kicked in, no orders were lost and Mother's Day wasn't canceled. But one of FTD's biggest competitors Here's what hap-

used the opportunity to trumpet claims that FTD's troubles threatened Mother's Day flower deliveries. The story even made ABC's network news. That competitor, 1-800-FLOWERS.

had an inside track in generating bad publicity for FTD: 1-800-FLOWERS also is a major user of FTD's systems. Yep, that's the position electronic com

merce outs you in. Systems troubles are no longer confined to your data center, or even to your corporate users. Competitoes tied into your networks now know about your systems problems almost immediately - and while you're recovering, they can use the information to play dirty tricks.

pened: On the Thursday night before Mother's Day, a user error brought down the Rercury Network, the pro-prietary network FTD uses to send flower ordens between florists. Say you're in Yonkers

and want to send flowers to morn in Mendocino. You call your local flower shop to choose and buy the flowers. That shop sends the order across the wire to the Mendocino florist, who fills the order. Mercury logs the trans action and makes sure the money gets divided correctly.



On Friday, FTD had one of its busiest days ever, with a half-million orders. But 1-800-FLOWERS noticed FTD's problems, as it sends some of its own orders across the Mercury Network In short order, a 1-800-FLOWERS reman convinced an ABC News pro-

ducer that his company was just an FTD So on Saturday evening, ABC News weekend anchorwoman Rence Poussaint told viewers, "Tomorrow is Mother's Day,

and that means lots of flowers. But because FTD experienced some computer glitches, that very is going to be a little late for some moth-The next thing view-

ers heard was a recorded hone message that 1-Soo-FLOWERS. We can no longer guarantee delivery of or-ders by Mother's Day."

Seconds later, an operator was shown ling a customer, "We've already cut off the delivery tomorrow out of state. We have. All right, ma'am. I'm sorry." ABC's official transcript of the newscast identi-

fied the operator as an FTD operator. After five hours. Mercury was back up. Viewers probably did, too. She wasn't. Reality check: FTD did announce that flowers ordered Saturday couldn't be guaranteed for Mother's Day delivers But FTD makes that annu every year. It had nothing to do with the

glitch - just the supply of flowers. An ABC producer told me 1-Soo FLOWERS had been "very helpful" for the FTD story. I'll bet, If I could get free national publicity, put words in my com petition's mouth and peg it on the credi bility of ABC News. I'd be helpful, too.

Sound sleazy? Sure. But would you put it past your own competitors to do th same thing to you if they got the chancel And if you're doing electronic commerci whether it's on a proprietary network or the Internet - they have that chance. What should you do? I'm not sure, but

you'd better start thinking about it, and soon. From now on, your systems aren't just a competitive tool - they're a competitive risk. Custon ers will remember FTD's

Author's Day "meltdown" for a long ime. Careful, or you could be next. []

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes

The Back Page

TEST-DRIVING A BRIDGE IN CYBERSPACE

California transportation engineers are using "orean s

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to experience what it's like to drive on the bridge, bilot

a ship benanth it or fly a plane above it. The MatroSim software runs an a high-and Silicon Graphics system





Rolodex on your lap Many companies put internal phone

directories on intranets to save the cost of printing copies that are quickly outdated. But that means remote users must dial in just to look up a phone number. To remedy this, Palantir in Baltimore has developed PhoneDex. It includes client software and data replication so lanton users can get a number with just a few keystrokes. A free trial edition is avail-

able at www.palantircorp.com.

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Americans who have tried the Internet but quit 9.3M Percentage of CIOs who agree disaster-recovery plans are 980/0 Average purchase by Percentage of CIOs who 25% a first-time Internet shopper

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The Hugger chair from Grahl Industries in Coldwater, Mich., has a split back that maids to the torso, reduces back strain and encourages a healthy posture



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Leeches, I hate leeches

At the recent Apple Worldwide Developers Conference, co-founds Steva lobs showed little respect for clona makers that help to prop up tha Macintosh business. "A clone maker is just a leech living off the fact that Apple's got this business model to make so much money at some level and resp soms back at the high end," he said. Jobs' comments are particularly timely, because Apple is goi

Vanity to spare

Oracle CEO Larry Ellison's rags to riches struggla (along with some talk of a nip and tuck here and there) is detailed in this month's Venity Feir magazine. The story is accompanied by a huge pullout quote that reads, "By tha time this article comes out, I will be the chairman of Apple." Maybe Next time Larry. The joke was on Digital last week when it hested a "night of

Live from New York, it's ...

fun and frivolity" with the cast of Seturday Night Live at Manhattan's Cornedy Nation club. Digital executives — especially OpenVMS honcho Wes Melling — found themselves on the receiving end of some vitriolic (some said tasteless) jokes by SNL's Tracy Morgan. Digital downplayed tha incident. "Overall, we were pleased with the event, and Wes was a great sport about it," Digital's Jim Barbagallo said

Nap time

Novell customers who attended the company's "Rock tha "Net Day" last Monday at the Solomon R. Guggenhaim Museum in New York found the affair so laid-back and devoid of content that at least two of them dubbed it "Rock the Cradle Day." One attendee said, "It literally

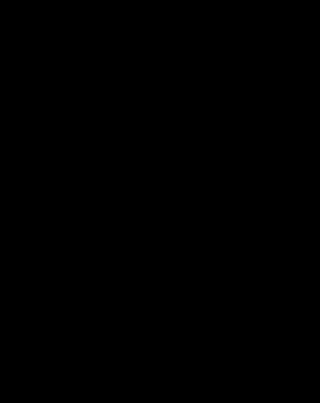
There's no free launch

Microsoft is said to be preparing to launch its Viper transaction pro-Microson is and a separate of the components in a cessor and falcon messaging technology as free components in a Windows NT server bundle. But there's a catch. We hear users will ed to upgrade their desktops to Microsoft's Enterprise NT client at shout \$250 a pop. They'll also need at least 32M bytes of RAM, and they'll be better off with 48M bytes. Adding 12M to 16M bytes costs between \$100 and \$400. Gotts read that fine print.

See you in September?

Shipments of Computer Associates' Jasmina object database have slipped again. Jasmine was supposed to be ready for general avail-ability by midyear, but CA officials now say it will be released sometime during the third quarter. The database, which is aimed at Wel and other multimodia applications, was originally promised for de-livery late last year. But CA postpooned its release to build in tighter inks to the lavou language. Despite the delays, CA still expects users to start deploying jasmine-bosed production applications during its

sers of the workhorse HP 3000 midrange platform are notorously prickly when it comes to defending their hardware plotform and the MPE/IX operating system that nurs on it. But they aren't above taking an occasional dig at themselves, a recent thread in the MPE newsproup reveals. To the ourstion. "How many MPE users does it take to change a lightbuilb?" one wise guy offered these answers. Two — one to change the bulb and another to recount how the old lightbulk surround on earth. quake in the '70s; None - MPE lightbulbs just don't burn out; Three — one to change the bulb and two to dissuade management from changing the whole g.d. - light fitting if a lightbulb just went of ever your head, contact news editor Patricia Keefe at (108) \$20-818jorpatrica keefe@cursom.



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TEST-DRIVING A BRIDGE IN CYBERSPACE



in hotels and cybercafes

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provides the powerful ability to visualize and analyze real-time traffic flow across your entire network. Intelligent agents monitor your network infrastructure. keeping your IT staff informed of changing conditions and often making adjustments as needed. What's more, Optivity includes analytical tools for capacity planning to help reduce budget surprises.

. WILL IT WORK WITH . WHAT I'VE ALREADY GOT? Of course, It wouldn't be truly adaptive if it didn't. You can adopt this technology at your own pace in costjustifiable increments. Adaptive Networking even makes our competitors' products smarter and faster. Good news. since you probably already own some.

> . CAN IT GIVE MY BUSINESS A COMPETITIVE EDGE?

Definitely. You can offer hot, new services and build closer links with customers and business partners. Should they need access to your corporate network from the Internet, you can offer secure virtual private network connections. Want to add voice-over-IP capabilities to link customers and service representatives from your Web site and reduce lone-distance phone costs? Adaptive networks can do this and much more.

WILL IT WORK WITH THE LATEST APPLICATIONS? Applications drive your network

needs. That's wby adaptive networks shift on the fly to match routine priorities to your applications. For example, financial transactions and video conferencing can take routing priority over e-mail nackets and Web browsing.

ANY QUESTIONS?

If your network can't do all of this, it's time to start asking a few questions of your own. For a free strategy paper, visit www.baynetworks.com/adapt/a3 or call 1-800-8-BAYNET ext. 294. Adaptive Networking is exactly what your business needs. Without question.



Adaptive Networking

. ALL RIGHT, WHAT IS IT? Adaptive Networking is a set of products and cornerstone technologies that transition today's networks to the IP-optimized networks of tomorrow. The aim of Adaptive Networking is to build networks that are invisible to users. worry-free for network managers, and strategic for the business.

. WHAT DOES IT OFFER? Our philosophy is centered around more services with less complexity. How? Through transparent scalable technologies that ensure longterm, non-disruptive network evolution; drive operational productivity at every level of the organization; and adapt to changes in network usage and business requirements

. WHAT ARE THOSE SCALABLE TECHNOLOGIES? Bay Networks products are being developed around industry-leading

reliable and scalable thanks to symmetric multiprocessing and a distributed architecture. In other words, there's no single point of failure to bring down your network. Moreover, the system automatically remutes traffic as needed to avoid bottlenecks. And you can easily add to, change, and modily your network without disrupting users.

. HOW CAN I REDUCE NET WORK OWNERSHIP COSTS! Adaptive networks automatically find and configure new devices to save your IT staff considerable time. And thanks to our Autosensing Technology, the system determines which users have 10Mbps or 100Mbps capabilities, for example, and matches them with the bandwidth they need

. HOW CAN WE AVOID . SURPRISES?

With Optivity®, your IT staff can proactively manage all the devices in your network as one cohesive system-even if it extends across the Internet. Optivity also

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